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Ontario Cancer Plan 2005-2008

Driving quality, accountability and innovation throughout Ontario's cancer system

The Ontario Cancer Plan 2005 – 2008

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1. Executive Summary

Introduction

Ontario has made substantial progress in the fight against cancer. The Government's investment in expanded treatment options, research, better drugs, more sophisticated diagnostic equipment, increased radiation services, tobacco control, prevention campaigns and expanded screening programs has clearly contributed to improvements in cancer survival. But, as substantial as these achievements are, there is much more to do. Patient care remains fragmented, involves sequential waiting, is prone to regional variation and often does not adhere to quality standards. Indeed, it is widely believed among cancer patients and their families, the general public, and healthcare professionals that the cancer system needs major improvements.

Effective partnerships have been key to the progress made thus far, and will be even more critical in the future. Working together with cancer experts, community advisory committees, hospitals, community agencies, public health units, the Ontario Hospital Association, the Canadian Cancer Society (Ontario Division), and the government, Cancer Care Ontario has been able to better understand the complex problems within the cancer system and move forward on a series of necessary improvements.

Achievements to-date

Highlighted in 2001 by the Cancer Services Implementation Committee, the problems in the cancer system have been confirmed in several reports. The following outlines some of the shared achievements over the past three years:

- Integration of 11 regional cancer centres with their host hospital, shifting the management of cancer services to the local hospital
- Formal affiliation agreement with Princess Margaret Hospital (PMH) unifying cancer services
- Creation of the Cancer Quality Council of Ontario (CQCO) mandated to publicly report on the quality of cancer services
- Partnership with the CQCO on two important reports: *Strengthening the Quality of Cancer Services in Ontario* and the *Four-Point Strategy to Reduce Waiting Times in Ontario*
- Creation of the Program in Evidence-based Care (PEBC) and a Clinical Council comprised of clinical program leads, both of which are important steps in improving the quality of cancer services in Ontario
- 18% increase in radiation therapy machine utilization and public reporting of provincial wait times for radiation services on the Internet
- Development and implementation of a cancer information management strategy
- Development of a surgical oncology program working to improve the delivery and quality of cancer surgery
- Release of the *GTA 2014 Cancer Report*, providing a framework for how service providers can work together
- Development and implementation of *Cancer 2020 Targeting Cancer: An action plan for cancer prevention and detection*; detailing specific goals, targets and recommendations for cancer prevention and early detection

One of the most important and fundamental achievements among those listed has been the creation of eleven new Integrated Cancer Programs (ICPs) in Ontario arising from the voluntary integration of regional cancer centres with their 'host' hospitals and the introduction of a new performance management relationship with Cancer Care Ontario. In less than eighteen months, this provincial, system-wide restructuring was complete and has lead to improved accountability, administrative efficiency and streamlining of clinical services.

In addition to positive benefits for patients, the impact of this system restructuring has led to the development of the 'new' Cancer Care Ontario – a specialized knowledge-driven, evidence-based organization that uses data to plan, fund, and report on performance on key issues in the cancer system. By linking the funding of ICPs to quality expectations Cancer Care Ontario is able to drive improvements in the cancer system in unprecedented ways. As well, by producing a number of key reports, Cancer Care Ontario is beginning to influence the delivery of a broader range of cancer services spanning the entire

continuum of care. This shifts our traditional areas of focus from radiation and chemotherapy in regional cancer centers to include a stronger emphasis on prevention and screening, diagnostic services, surgery and palliative care in organizations across the entire system.

This past year, at the request of the Ministry of Health and Long-Term Care (Ministry), Cancer Care Ontario has turned its attention to the development of the first-ever Ontario Cancer Plan.

Planning process

Driven by Cancer Care Ontario, the development of the Ontario Cancer Plan reflects the guiding principles of the organization: evidence-based; equity; active engagement; performance-oriented; and value for money. The Plan uniquely represents a community, regional and provincial understanding and response to cancer system issues, having been informed by a regional cancer planning process, a corporate planning process, and through a formal review by international experts. Development of the Plan involved more than 3,000 people from across the continuum of care. Using the Ontario Cancer Registry and other clinical and administrative data held by Cancer Care Ontario, the Plan provides a new and expanded profile of cancer services within the entire cancer system in Ontario. This application of data to cancer service planning is one of the most noteworthy outcomes of the cancer planning process.

The Ontario Cancer Plan

The plan outlines a provincial strategy for improving the quality of cancer care throughout Ontario. It is the first comprehensive cancer plan for Ontario and the first of its kind in Canada. It outlines a discrete number of priorities, targeted investments and action plans with defined timelines and outcomes. The plan looks at the growing demand for cancer services ten years into the future and makes recommendations about what needs to be put into place over the next three years to contain and manage this growth. The directions put forward in this plan build on and reinforce government priorities, including actionable improvements in wait times, improved accountability, and regional service integration.

Limitations

The Ontario Cancer Plan is a work in progress. Additional planning is required to incorporate the important contribution of primary care practitioners and the voluntary sector into the Plan. The Cancer Plan puts forward service volumes and associated costs to close the gap between demand and capacity, which are still preliminary. Cancer Care Ontario will perform additional analysis of these estimates and confirm requirements later this year. Service increases in other areas have not yet been quantified and will be addressed over the course of the next few months. These areas include volumes required to reduce waiting times for cancer surgery, and volumes for diagnostic and clinical support services and home care visits. Finally, the plan will not achieve its intended outcomes without a concerted effort and dedicated resources from the Government of Ontario.

The Cancer Plan describes system improvement in three ways:

- **By doing more** procedures for cancer patients, consistent with the growth in cancer incidence and prevalence. This includes expanding existing cancer centres and building new centres to meet the growing incidence of cancer over the next ten years
- **By doing things differently,** to generate improved efficiencies through coordinated access, managing waiting lists, intensifying prevention and screening efforts, improving patient navigation at the local level, and employing innovative health human resources
- **By doing it right,** by expanding the use of evidence-based guidelines, implementing standards, and applying research knowledge and performance measurement to the delivery of cancer services

Acting on what we know

It was not so long ago that Ontario was referring cancer patients to U.S border cities for treatment. If we are to ensure this does not happen again, we must meet the current and future challenges that affect our provincial cancer system by acting on what we know. The Government of Ontario has set an ambitious agenda to transform the health sector – improving access by reducing waiting times, improving the efficiency of the health system, advancing regional service integration and ensuring greater accountability for public funds. As a component of the larger health system, the plan for cancer care incorporates what we know about where health care is going in the province and remains completely aligned with these government initiatives. The Plan includes responsible targeted investments for increased volume of treatment; improved waiting times; innovative transformation initiatives to enhance quality, accessibility and accountability across and within the system; and, investment in capital development to meet longer-term growth in cancer cases. The fiscally responsible actions proposed in this Cancer Plan will make significant progress towards these goals.

Ontario Cancer Plan – full report

The full report provides much more detail on the case for action as well as a complete description, including deliverables and expected outcomes, of each action plan. It also includes summaries of the regional cancer plans; a description of the new methodology used to project volumes and associated costs; a detailed account of the cancer planning process; and, a glossary and list of acronyms. The full report is available on-line at www.cancercare.on.ca.

Case for Action

Cancer in Ontario – The facts

- Cancer is the second leading cause of death in Ontario. More than 25,000 Ontarians will die from cancer this year. This equals 70 deaths per day, or one death every twenty minutes
- 2 out of 3 Ontario households have been affected by cancer
- Cancer is the number one cause of potential years of life lost in people under 40
- Cancer incidence (number of new cases) will grow as a result of population growth, aging of the population and increased cancer risk
- In the next 3 years, the number of cancer incidence cases will grow from 54,000 in 2004 to 63,000 in 2007
- 85% of new cancer cases occur in people aged 50 and older
- Cancer survival rates have been improving; the five-year survival rate now exceeds 50% for most cancers
- Approximately 50% of the burden of cancer is potentially preventable by reducing known risk factors

The Ontario cancer system – The facts

- Cancer patients experience a fragmented system of care with major gaps in supportive care, palliative care, health information and access to services[1]
- Cancer services are not sufficiently well coordinated at the regional level
- Wait times for cancer surgery, radiation, systemic therapy and diagnostic services are longer than recommended by experts[2]
- Existing facilities are not able to support projected increases in demand over the next decade
- The lack of reliable, timely and standardized data across the cancer system has affected planning, management and monitoring of cancer system performance
- There are few provincial standards, and performance indicators for cancer are not developed
- Variations in quality exist across regions, organizations and practitioners[3]

The growing burden of cancer care

To inform the Ontario Cancer Plan, Cancer Care Ontario developed a new forecasting methodology by leveraging the power of the Ontario Cancer Registry as a planning tool. This produced advanced forecasts of incidence, prevalence, mortality and survival, and future demand and activity, which significantly improves the way we project the burden of cancer (30 or more years into the future) and improves how we translate those projections into services and costs. Specifically, by relating the demand for cancer services to the burden of cancer, we have a more accurate forecast of the resources required to support the cancer system.

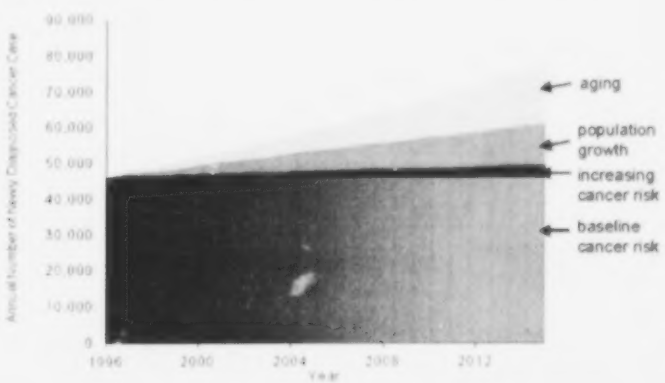
Most notably, the new data provides evidence that Ontario faces significant challenges in addressing the increasing burden of cancer:

1. The demand for cancer services is increasing and will accelerate over the next 10 years
2. The capacity to meet this demand is constrained by a number of factors, such as health human resources, capital resources, coordination of services, and utilization of services. Some of these factors can be addressed by a more timely addition of new services, while others will result in innovative approaches to service delivery
3. The quality of cancer services in Ontario is uneven, meaning that not all people in Ontario have access to a consistent quality of cancer services. This requires focused attention to close the gap between what we know and what we actually do

Cancer incidence

The incidence of cancer is expected to grow from 54,000 in 2004 to 74,000 in 2014, which translates into an annual increase of 2.8% in demand for cancer-related health services. About 90% of this increase is fuelled by population growth and aging, and only 10% by changing cancer risks (see Figure 1).

Figure 1: Growth in cancer incidence in Ontario 1996 to 2014



Source: Cancer Care Ontario (Ontario Cancer Registry, 2004)

Cancer prevalence and mortality

Over the next three years, the number of people living with cancer will increase from 410,000 to 460,000, and an estimated 25,000 people will die from cancer in 2004.

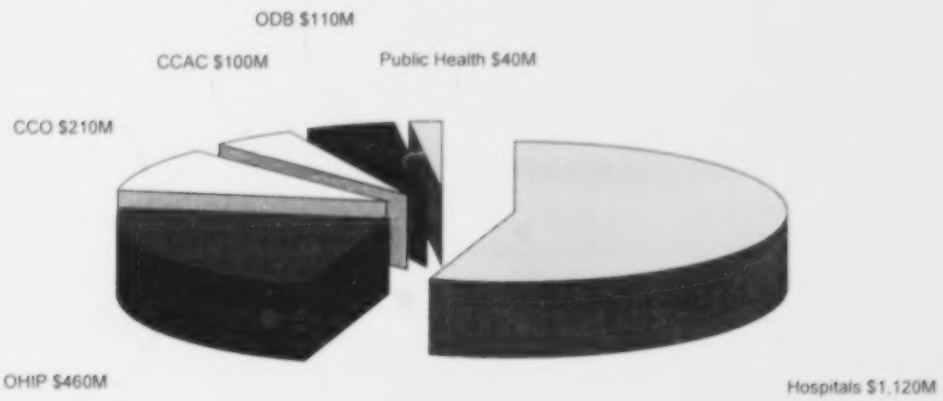
Cancer survival

The overall cancer survival rate has steadily improved over the past 20 to 30 years, and is expected to continue improving over the next 10 years, largely because of effective early detection and better treatment. In Ontario, the five-year survival rate for the majority of cancers now exceeds 50%, and for some cancers (breast and prostate) is approaching 90%. Lung cancer survival rates remain steady, at less than 20%.

The growing cost of cancer

Cost of cancer - Ontario spends approximately $2-billion per year on cancer services, as follows:

Figure 2: Ontario 2004/2005 estimated expenditures on cancer care



Source: Cancer Care Ontario, 2004

Cancer Care Ontario and Princess Margaret Hospital account for approximately 20% of traceable costs in the Ontario cancer system. As a way to ensure quality as well as value for money, there are clear lines of accountability tied to expenditures in these affiliated organizations. In contrast, the remaining 80% of cancer cost is attributed to more than 100 Ontario hospitals and community agencies where there is no formal way of ensuring that the quality of cancer services meets provincial standards or whether money is being spent in an efficient manner. In-patient and day surgical costs account for the highest proportion of expenditures. New methods of analysis on phases of care for in-patient and day surgery activity have shown that the costs are highest for activity associated with the initial and terminal phases of cancer care. Analysis of this type allows us to explore options for moving to more appropriate and more personal community-based services particularly in the end of life phase of the cancer experience. By better understanding the sources of expenditure, we can focus our efforts more precisely on efficiency, performance and quality measures and specified accountability.

The indirect costs of cancer, including loss of productivity, are estimated at $5 billion in Ontario[4].

Growing patient concerns

While the stories about high quality, compassionate care are plentiful, there are many more about patients waiting at every point of care; duplicated tests and work-ups as people move from institution to institution or provider to provider; people falling through the cracks as the 'system' fails to ensure that all the appropriate information for clinical decision making is shared appropriately and available in a timely and useful way; and finally, patients who receive a different level of care depending on where they live.

Concerns about quality of cancer services are well documented in the Canadian Cancer Society (Ontario Division) study of patient and caregiver needs entitled *Breaking Down the Barriers*, published in 2003. Overall the study found that patients and their caregivers did their best to overcome the many barriers they faced, but that numerous gaps existed across the full spectrum of care from detection and diagnosis through to palliative care.

In addition, the *GTA 2014 Cancer Report: A roadmap to improving cancer services and access to patient care*, provides data from a public opinion survey that reports a high degree of concern about the ability of Ontario's healthcare system to deliver cancer services to those in need. Overall, 77% of respondents were very or somewhat concerned. Furthermore, almost 25% of respondents identified waiting times as the biggest problem facing cancer care in Ontario.

Growing evidence for transformation

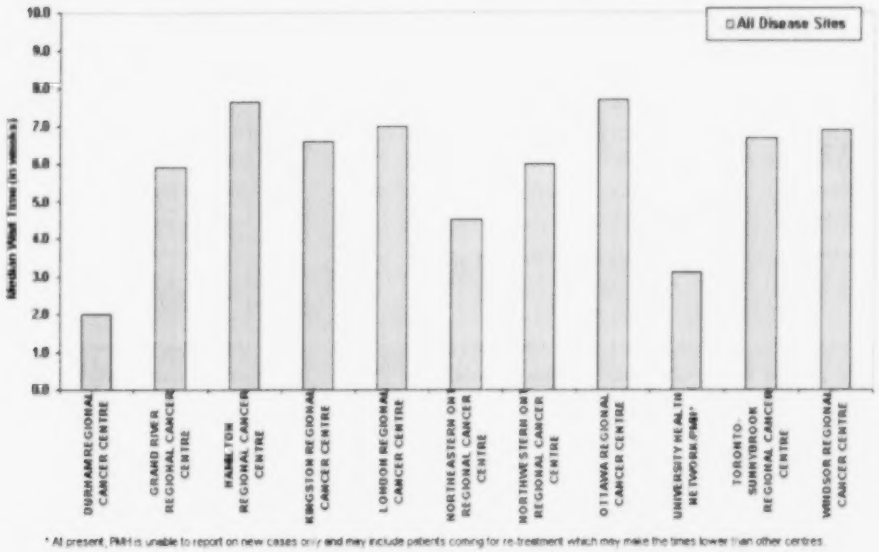
It is clear from the evidence, as well as from the results of cancer planning, that the delivery of cancer services needs to be transformed to meet the current and future demand for cancer care in Ontario. The major issues have been validated in several reports published since 2001. Not surprisingly, there is a high degree of consistency among the reports on what the problems are (increased waiting times, poor coordination of service, quality issues, gaps in knowledge, and lack of investment in key areas) and what type of action needs to be taken.

More specifically, the CQCO report, *Strengthening the Quality of Cancer Services in Ontario*, clearly showed that access to cancer services is deteriorating and that there are discrepancies between existing practice standards and actual care delivery. An example of the gap between what we know and what we do is apparent in poor colorectal screening participation rates. We know that screening for cancer can detect the disease in early stages when it can be treated more easily and save lives. Yet, despite expert recommendations and compelling evidence, screening rates in Ontario for colorectal cancer are below target levels.

Furthermore, there have been two large-scale crises related to waiting lists for radiation treatment in Ontario. Despite swift response by the Ministry and Cancer Care Ontario, it is generally accepted that people in Ontario wait longer for cancer services than they used to and longer than recommended by expert bodies. This includes waiting for diagnostic services, cancer surgery, radiation therapy and systemic therapy.

In fact, the majority of Ontario patients will wait longer for radiation therapy than is recommended by the consensus-based targets established by the Canadian Association of Radiation Oncologists (CARO) (see Figure 3). At the same time, evidence suggests that radiation therapy is under-utilized in Ontario, which means that capacity concerns may be larger than indicated[5].

Figure 3: Radiation therapy wait times – Referral to treatment, 3-month rolling median, May to July 2004 (all Integrated Cancer Programs, all disease sites)



* At present, PMH is unable to report on new cases only and may include patients coming for re-treatment which may make the times lower than other centres

Source: Cancer Care Ontario (Activity Level Reporting, 2004)

Similarly, waiting times for cancer surgery have increased over the past decade and will likely continue to rise largely as a result of growing cancer incidence. The median waiting time for a patient from referral to a specialist to the start of systemic therapy (usually chemotherapy) at an integrated cancer program has increased at a rate of approximately four days per year between 1999 and 2000, largely as a result of a shortage of medical oncologists[6].

We know more about cancer and the cancer system today than we ever have in the past. That knowledge and the increasing body of evidence leads us to conclude that Ontario's cancer system needs focused and timely change to meet the challenges of the next three years.

The Ontario Cancer Plan

Priorities for action

The Ontario Cancer Plan is designed to provide actionable advice to government and set the stage for rapid decision making and implementation. It identifies existing challenges and actions required over the next three years to improve the quality of cancer care for patients and address the unrealized potential of prevention in the province.

The Ontario Cancer Plan outlines six priorities for action:

1. Broaden the development and use of provincial standards and guidelines
2. Implement regional cancer programs
3. Close the gap by reducing demand for cancer services and increasing capacity
4. Implement rapid access strategies
5. Invest in performance measurement and accountability
6. Advance the co-ordination and focus of cancer research efforts in Ontario

Priority 1: Provincial standards and guidelines

Many talented, dedicated professionals at quality healthcare organizations provide Cancer services across the province. Efforts are being made every day to create and capitalize on the innovations gleaned from research and new technologies and treatments. In spite of these efforts, evidence shows that there are serious quality gaps in Ontario's cancer system that must be addressed. The impact of these quality gaps for patients is substantial, through poorer outcomes, poorer quality of life and lower productivity and, for all Ontarians through unnecessary costs. For the cancer system in Ontario, where the direct costs of cancer care are estimated at $2-billion, the impact of a quality improvement agenda could be significant.

Over the past 15 years, there has been an explosion of knowledge about the large group of diseases that comprise cancer and their appropriate treatment, making it very difficult for clinicians to stay abreast of the vast amount of new clinical information. This can result in wide variation in cancer practice, thereby placing patients at risk of not getting the best care.

While the capacity to interpret and communicate cancer evidence exists in Ontario, through the internationally renowned Program in Evidence-Based Care (PEBC), there is a recognized need (confirmed through the Ontario Cancer Plan) for practice guidelines and other knowledge products to be applied to parts of the cancer system not previously addressed. When used appropriately, these guidelines and standards can minimize inappropriate practice variations, support quality improvements, and optimize the use of scarce resources in the health care system. Ontario's existing clinical practice guidelines are focused mostly on anti-cancer drugs and radiation therapy, however, it is critical to maintain an appropriate balance of guideline coverage across the spectrum of cancer treatment.

Specifically, there are significant gaps in guidelines for diagnostic imaging, surgery, pathology, and supportive and palliative care.

Equally importantly, it is essential that guidelines be used in clinical practice. In some cases, there is a high degree of consistency between Cancer Care Ontario's clinical practice guidelines and clinical practice in regional cancer centres[7]; however, in other cases, patients are not receiving the recommended treatment even within the specialized cancer centres. The system must improve guideline coverage across the spectrum of cancer treatment, and make concerted efforts to accelerate the uptake of existing and future guidelines and Cancer Care Ontario must continue to invest in systems and tools to support and monitor uptake.

Finally, the organizations that provide cancer services should also meet established standards.

Action Plans

- Foster an evidence-based culture in the cancer care community and facilitate uptake of new knowledge, more specifically:
    - The Program in Evidence-Based Care will use the results of its program evaluation to refine its existing knowledge products and to develop new and innovative processes and tools to support knowledge transfer
    - This work will focus on 14 existing disease sites and care domains, with a particular emphasis on expanding efforts related to prevention, screening, surgery and patient safety
    - Cancer Care Ontario will ensure timely production, dissemination, evaluation and updating of clinical practice guidelines, standards and planning tools
- Establish program standards, guidelines, quality indicators and accountability mechanisms in three priority areas; imaging, pathology and palliative care. More specifically, Cancer Care Ontario will develop cancer-specific palliative care standards in collaboration with the work of the broader Ministry end-of-life strategy.
- Collaborate with stakeholders to develop standards for the organizations that deliver care, that set out the requirements necessary to be recognized by Cancer Care Ontario as a designated cancer service provider. These standards will address issues such as the leadership and accountability for cancer services within an organization, appropriate physical and human resources, organizational structures and support services, data collection and volume and scope of clinical services necessary to provide high quality care and ensure good outcomes.

Priority 2: Regional cancer programs

The organization of specialized cancer services at the regional level remains fragmented, and outside of the ICP hospitals, there are no ways to ensure that provincial standards are met by organizations that chose to provide cancer services. For the most part there are no clearly defined mechanisms for integrating and co-ordinating cancer services across the continuum. As a result, patients find services difficult to navigate and they often wait too long at each point in the care process.

Notably,

- There is no way that patients or their families can be assured in any objective way that the cancer services provided through organizations within their community are of adequate quality

- Despite the importance of guidelines and standards, less than 50% of cancer service organizations in Ontario are required to adopt provincial cancer standards. Currently, funds flow unencumbered to these unaffiliated organizations

There is unanimous acknowledgement that service providers need to collaborate to improve cancer service delivery within their region, addressing issues such as location, distribution and amount of service required to reach access and quality targets.

As a result, regional cancer programs will take shape over the next three years, linking together providers, patients, organizations and decision makers from across the full spectrum of cancer care (prevention, screening, diagnosis, treatment, and supportive and palliative care) within a defined geographical area. Services will continue to be provided by individual organizations and agencies; the regional cancer programs will focus on the common goal of improving access to quality cancer services within their communities while maximizing opportunities for collaboration and synergy with other health system initiatives such as the Local Health Integration Networks (LHINs).

Action Plans

- Advance patient-focused regional cancer programs across Ontario, by bringing together regional cancer service providers and consumers to achieve the integration and quality goals. This will be achieved through a model of regional cancer programs, which bring providers together in a formal way. Agreements among organizational partners will formalize commitments to regional and provincial planning of specialized cancer services, as well as ensure implementation of provincial cancer standards and performance reporting. Community involvement will be an important dimension of the regional cancer programs. Regional cancer programs will be required to report on ways in which they involve the public and other stakeholders as part of their annual report to Cancer Care Ontario and their communities

- Address the pressing need to co-ordinate and deliver palliative care services across the province. Through this action plan, Cancer Care Ontario will participate in the broader planning that is occurring this year through the Ministry's end-of-life strategy, both at the provincial and regional levels. Similarly, Cancer Care Ontario will be working with the Ministry on strategies that address the prevention of chronic diseases, providing leadership at the provincial level and in regional network and service planning

Priority 3: Closing the gap between demand and capacity

Improving access over the long term will require a balanced agenda of increasing service capacity and implementing strategies to reduce the demand for cancer services over the longer-term.

A. Reduce demand

In developed countries, more than half of all cancers are potentially preventable. In 2003, Cancer Care Ontario and the Canadian Cancer Society released a major report, *Cancer 2020*, a long-range action plan for cancer prevention and screening in Ontario. *Cancer 2020* sets out measureable provincial targets for cancer prevention and early detection to be achieved by the year 2020. Ontario has recently shown strong leadership in working toward these targets, particularly in the area of tobacco control. This action plan and the work of the newly created Ontario Cancer Prevention and Screening Council underpin the actions proposed in this Plan.

Prevention focuses on minimizing and eliminating modifiable risks that can cause cancer. These risks include such things as tobacco use, poor diet, being overweight, lack of physical activity, alcohol use, risky sexual activity, exposure to ultraviolet rays, exposure to occupational and environmental carcinogens and infectious. Processes.

Screening focuses on checking for disease in apparently healthy individuals who do not have symptoms of cancer. Current efforts are targeted toward increasing participation in screening for breast and cervical cancer; development of a screening program for colorectal cancer; and evaluation of potential screening programs for prostate and other cancers.

There is no single intervention that will reduce the prevalence of population risk factors and thereby reduce the burden of cancer. Rather, multi-faceted approaches to prevention and screening – that are comprehensive, integrated and sustained – are more likely to lead to significant change.

These approaches require strong provincial goals and strategies that can be implemented in a co-ordinated and consistent manner across all regions in Ontario. All regions of the province have prevention and screening networks to lead local implementation of prevention initiatives.

Aboriginal Cancer Strategy Given the many unique challenges, including rising cancer incidence and excess mortality among the Aboriginal populations, there is an urgent need for cancer control strategies in primary prevention, screening, diagnosis and treatment for Aboriginal peoples.

Action Plans

- Develop and implement an integrated action plan, as developed by the provincial Cancer Prevention and Screening Council, to ensure progress toward the Cancer 2020 targets. Priorities include integrated chronic disease prevention, focusing on tobacco control, nutrition and healthy body weight and physical activity as well as a sustained agenda for reducing cancer risks among Ontario's population. A key component of this strategy is to build regional capacity to implement prevention initiatives

- Develop a provincial screening strategy that expands the existing breast screening and cervical screening programs and introduces a colorectal cancer screening program. These efforts will be co-ordinated with the necessary diagnostic assessment activities

- Implement components of the Aboriginal cancer strategy that will lead to reduction of preventable cancer. This includes the development of culturally appropriate, evidence-based communication materials and health promotion strategies for prevention and screening

B. Increase capacity to meet predicted demand

Targeted resource increases for cancer care are essential. Currently, there is not enough capacity for timely cancer care, yet the demand for cancer services continues to increase. Without additional capacity, Ontario's cancer system will not be able to keep up with the growth in new cancer cases – this may cause excessive waiting times and/or a requirement to re-refer cancer patients to the U.S. for treatment.

The Ontario Cancer Plan demonstrates the need for:

- Making strategic investments in cancer facilities, equipment and operating costs. This includes placing a greater priority on obtaining planning approvals for new treatment facilities, so that new or expanded treatment capacity can be delivered both within the three years of this Plan and in the future

- Increasing the volumes of cancer treatments to meet the projected growth. Cancer surgery volumes are projected to increase by 15% over the next three years according to estimates based on Cancer Care Ontario's new methodology. Similarly, systemic therapy is expected to increase at an annual rate of 3%, and the demand for radiation therapy continues to exceed capacity. In an effort to match capacity to demand, cancer centres operate their radiation equipment beyond the standard planning parameters but remain dependent on the availability of human resources and appropriate operating funds

- Addressing the projected growth of the New Drug Funding Program (NDFP). NDFP is an evidence-based program established and currently administered by Cancer Care Ontario to fund expensive intravenous anti-cancer agents. The program validates and tracks more than 90,000 reimbursement requests for over 14,000 patients annually at a cost of $62.4-million over the past year (2003/2004). This is expected to grow to a staggering $200-million in 2007/2008

- Implementing new funding approaches to address the challenge of how to allocate limited resources among competing and growing needs of the population. These new approaches are needed to make informed decisions that maximize patient outcomes while simultaneously minimizing costs

Action Plans

- Fund outstanding Post-Construction Operating Plans for eight centres under construction or in planning to maximize impacts of capital investments. Immediate priorities include Peel, Hamilton, Sudbury, Grand River and Durham. Once other planned expansions over the next three years are in place, PCOPs will also be required for Ottawa, Kingston and one center north of the Greater Toronto Area

- Fund new capital construction in seven areas of the province. Immediate priorities include construction of additional support space in Kingston and expansion of the Ottawa Regional Cancer Center. Construction also needs to proceed so that more cancer services including radiation can be added in Newmarket & Barrie, Niagara region, Sudbury/Algoma, and Peel

- Fund additional capital equipment for centers that are already built but not operating at full capacity. This will include three additional machines in Peel by 2006, one machine in Grand River by 2007, and three more machines for Durham by 2008

- Shift from a strategy of capital equipment replacement to one of capital acquisition, which increases the uptake of innovative technologies for which there is evidence of improved quality and productivity. Increase the ongoing annual replacement fund to allow for replacement of out-dated equipment so that radiation treatment can be delivered according to accepted standards

- Add volumes in targeted areas to meet predicted increases in demand for cancer surgery, systemic therapy and radiation treatment

- Implement a new and more coordinated approach to funding new and expensive anti-cancer drugs, by streamlining and aligning the decision making processes of the Ministry's Ontario Drug Benefit Program and Cancer Care Ontario's New Drug Funding program

- Implement new approaches to funding cancer services. First, by developing, testing and implementing a new rate-complexity-volume funding methodology for cancer services (multi-year funding) by 2007 to ensure appropriate resources for cancer services. Second, achieve greater alignment between the compensation of academic specialists and cancer system goals. More specifically, as these alternative funding plan agreements are re-negotiated, Cancer Care Ontario will articulate a clearer set of objectives (tied to the system goals), with defined quality metrics that emphasize performance and accountability

Priority 4 - Rapid access strategies

Access to cancer services and waiting times for service in Ontario have become a serious quality of care issue – these must be addressed. The Government of Ontario is taking action on wait times for cancer services through the recently appointed Health Results Team. Later this year, Cancer Care Ontario will provide the Health Results Team with a proposal to implement a comprehensive strategy to address wait times across the cancer system. This strategy will address information needs to assess and report on wait times as well as specific activities and associated funding required to reduce wait times.

Several reports on waiting times for diagnostic services describe a growing problem of access to diagnostic imaging. Data compiled on waiting times for CT and MRI reported that 90%[8] of Ontario patients wait longer then medically optimal for the services that are commonly used for cancer diagnosis. There is also evidence of inefficiency and inappropriate use of diagnostic imaging in Ontario. A reorganization of entry into the cancer system and diagnostic processes could reduce duplicate tests, improve efficiency and positively impact waiting times throughout the cancer system.

There is good evidence from other jurisdictions that rapid access diagnostic units can reduce the waiting times and lead to improved quality and more efficient care by concentrating diagnostic services, multi-disciplinary consultative expertise, patient information and psychosocial supports[9].

As previously noted, Ontario is facing health human resource shortages in a number of areas, including endoscopy for colorectal screening, pathologists for diagnosis and anesthesiologists for surgery. Part of the human resource solution is to create new non-traditional roles for health care professionals in order to expand capacity.

In addition, process improvements, such as redesigning the process to deliver radiation therapy, can yield significant gains in the efficiency of the cancer system.

Finally, innovative new technologies are needed to promote communication between the patient and health care provider and help patients navigate their way through the complex cancer system. Tools such as patient portals and tele- and video-technologies can deliver information and support cancer consultations and treatment in urban, and especially rural and remote communities.

Action Plans

- Recommend and develop an approach to establish systems for collecting and reporting on wait times, activity and reasons for delay. Cancer Care Ontario will also develop an approach to realizing an immediate reduction in wait times for cancer surgery
- Implement two Rapid Access Diagnostic Units (RADUs), one in each of Sudbury & Ottawa
- Implement innovative health human resource projects that include piloting advance practice. radiation therapists, non-physician flexible sigmoidoscopy, and expanded use of oncology nurse practitioners
- Fund low-cost, high-impact process improvement projects, such as those that examine the use of alternate service delivery models in the areas of diagnostic and treatment services, colorectal screening, wound management and oncology rehabilitation
- Implement innovative new technologies to expand use of the Grand River Patient Portal, and conduct process re-engineering to reduce wait times for expert pathology reports

Priority 5: Invest in performance measurement and accountability

The availability of timely, accurate and standardized data is the basis for measuring performance and ensuring accountability within the cancer system. Full accountability requires monitoring, evaluation and public reporting on the use of provincial guidelines and standards for care and system management. This will enable Cancer Care Ontario to evaluate the performance of various entities within the cancer system, provide and/or advise on tools to implement (or adjust) improvement efforts to address key issues such as quality and access to care, and monitor the effect of these efforts over time.

As performance measurement and management are core disciplines for Cancer Care Ontario, it is critical to continue investing in performance measurement and accountability. Ontario has significant gaps in its understanding of cancer service delivery, including little information about programs outside of the formal cancer system. This includes OHIP-funded screening activities, diagnostic imaging, cancer surgery, chemotherapy, supportive care and palliative care.

Cancer Care Ontario has been working with its partners on the implementation of the Cancer Information Management Strategy designed to create and provide information necessary to improve the cancer system. This comprehensive multi-year strategy forms the basis upon which all other actions within this plan rely.

Action Plans

- Implement a rational framework for indicator reporting at the program, organizational and system levels to help improve quality. Priorities will include the CQCO public report on a core set of indicators of cancer system performance (scheduled for release in early 2005); the development, collection and dissemination of information about cancer risks and screening to support *Cancer 2020*; and selected program-related performance indicators

- Expand the scope and quality of standardized data collected by Cancer Care Ontario for performance monitoring and system planning. This includes information about stage of cancer at diagnosis, pathology information, cancer risk factors, and the delivery of chemotherapy

- Accelerate data extraction, analysis and reporting cycles for ongoing performance improvement by enhancing data management technologies and building on the skilled and efficient informatics team at Cancer Care Ontario

- Implement new performance reporting systems associated with accountability agreements, and implementation of the Ontario Cancer Plan

Priority 6 - Cancer research

Cancer research is essential to quality cancer service. Given Ontario's population and the relatively small size of its cancer research program, it is critical that we undertake a focused provincial approach to cancer research. In fact, without major improvements in cancer prevention and treatment – driven by research – the number of deaths from cancer will double in Ontario in the next 20-25 years. Furthermore, the integration of research and care delivery benefits patients, as well as the recruitment and retention of high quality professionals.

Still, there is no formally constituted entity to co-ordinate cancer research in Ontario. Funding for research comes from government (both provincial and federal), numerous foundations and several publicly supported non-governmental organizations and industry. Cancer Care Ontario has recognized that it must seek new partnerships such as with national organizations, industry, publicly supported cancer research organizations and private individuals.

Action Plan

- Cancer Care Ontario will lead the development of a provincial cancer research council to forge stronger collaboration and co-ordination of cancer research efforts across Ontario

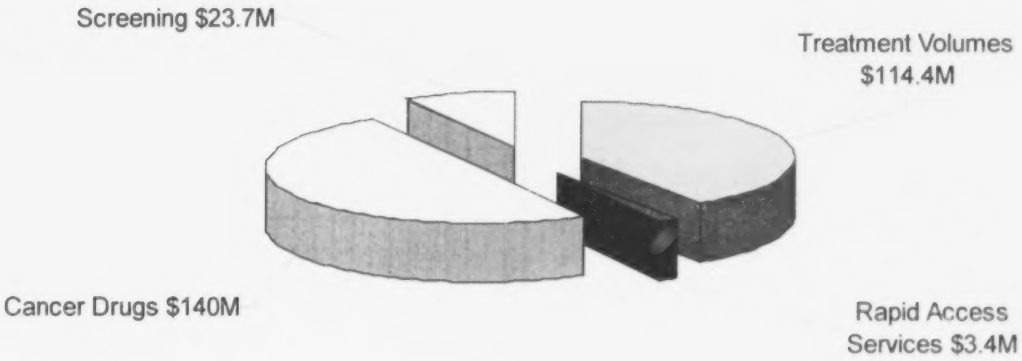
The cost of improving the cancer system – A targeted investment strategy

The Ontario Cancer Plan is about investing in the future. It presents a clear, compelling case for action tied to a set of targeted, strategic investments. In this Plan, investments are broken down into three distinct categories: volume, transformational, and capital investments, however; these investments are interdependent. For example when a capital investment, such as the installation of a new radiation machine, is made, volume investments, in terms of the people needed to run the machine, must also be made. The figures below present the total incremental base adjustment at the end of the third year of the Plan (2007/2008) except where one-time funds are noted.

A. Volume investment

The investments required to address projected growth in cancer screening and treatment volumes are described in Figure 4. The Ontario Cancer Plan requests incremental funding over each of the next three years for these volume increases.

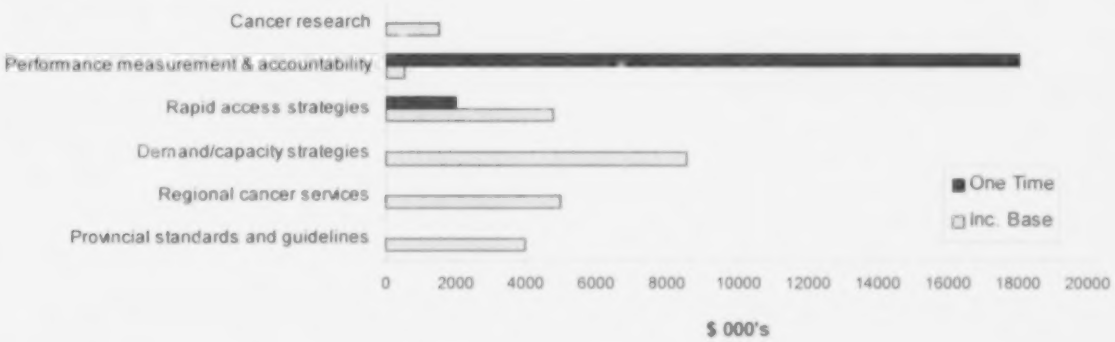
Figure 4: Volume investments – Ontario Cancer Plan 2005-2008



B. Transformational investment

A small number of strategic investments are required to support transformation in the system and lay the foundation for providing care to more people more efficiently in the future. These investments are described in Figure 5 and represent an increase of approximately 2% on the $2-billion currently spent on cancer services in Ontario.

Figure 5: Transformational investments – Cancer Plan 2005-2008 Incremental Base Operating Funds and One Time Funds

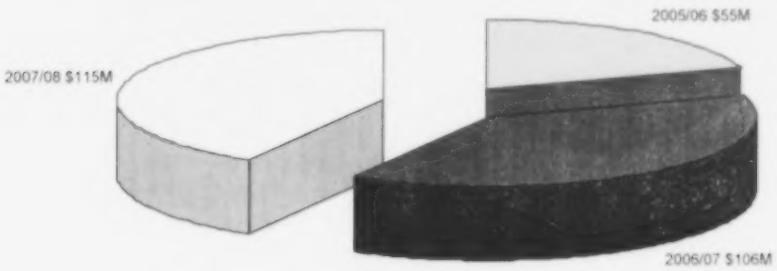


** These figures present the request for the total incremental base adjustment between 2004/2005 and 2007/2008, except where noted (one time funds for information management and capital investments).*

C. Capital investment

A program of capital investments to construct new treatment facilities is needed in seven areas of the province and includes the purchase of new radiation therapy equipment. The breakdown of the funds requested is shown in Figure 6.

Figure 6: Capital investments (Total three-year investment, by year)



These investments are expected to generate continuous progress toward achieving the long-term cancer system goals.

System improvement: Expected results

In return for these targeted investments, the Cancer Plan expects to achieve the following broad system results:

- Increased public confidence in the cancer system
- Improved wait times
- Avoidance of having to send patients to the United States for cancer treatment
- Improved patient satisfaction
- Better quality outcomes such as improved survival rates
- Standardized, reliable, timely data about the performance of the cancer system
- Equitable access to quality safe cancer services across the province
- More effective use of taxpayers' dollars
- More screening for cancer leading to earlier detection
- Prevention as a sustained priority
- Local process improvements and efficiencies that can be transferred across the cancer system
- Reduced long-term demand for cancer services
- Innovation recognized as a key characteristic of the cancer system
- A transparent, evidence based culture for clinical and administrative decision making
- Specialized, well coordinated planning and performance improvement activities at both regional and provincial levels

Policy Implications – Changing the way we work

The Ontario Cancer Plan makes a number of policy-level recommendations for the Ministry:

- All breast screening in the province should become affiliated with the Ontario Breast Screening Program as a means to support recruitment and quality targets
- Ongoing support for the development and implementation of rate-volume-complexity (multiyear) funding for cancer services
- Ongoing commitment to the development of a co-ordinated drug review process for new anti-cancer drugs
- Ongoing commitment to launch innovations in the cancer system and to support innovative use of health human resources by addressing scope of practice issues with the health regulatory bodies
- Capitalizing on lessons learned through the $5-million fund for innovative solutions to address waiting times in the cancer system that was announced in the May 2004 Ontario budget
- New funds for incremental cancer service volumes steered by Cancer Care Ontario to encourage the use of guidelines and fulfillment of program quality and organizational standards
- Cancer-related capital projects should be given priority status for fast track approval
- The rules governing the purchase of radiation therapy equipment should allow for new and emerging technologies of proven benefit

Next Steps

The Ontario Cancer Plan, delivered as advice to government and representing a blueprint for action, provides recommendations and actionable steps to fundamentally improve access to quality cancer services for the citizens of Ontario.

Implementation of the plan will be tackled in the same manner as it was developed - through continuous, productive interaction with the Government of Ontario and collaboration with stakeholders and partners across the continuum of cancer care in the province. Cancer Care Ontario, in its provincial advisory, planning and funding role, will continue to work with its many partners to drive quality, accountability and innovation throughout the cancer system.

2. The facts
Cancer in Ontario

- We now have more and better information about cancer to inform decision making
- Improved regional data helps communities identify local problems and solutions
- Using the most accurate data means that scarce resources will be targeted to yield the maximum benefit for cancer patients
- Ontario spends approximately $2-billion per year on cancer services. The costs of providing cancer services will continue to increase
- Cancer incidence is growing as a result of population growth, aging and increased cancer risk

Planning effectively by leveraging the Ontario Cancer Registry

The Ontario Cancer Registry (Registry) is a computerized database of all information on all Ontario residents who have been newly diagnosed with cancer (incidence) or who have died of cancer (mortality). Since 1964, more than 1.3-million cases have been registered, which represents about 97% of all cases. The Registry is one of the largest and most robust registries in North America and has, until recently, been used primarily for national reporting and epidemiological research. To inform the Ontario Cancer Plan, Cancer Care Ontario developed a new forecasting methodology by leveraging the power of the Registry as a planning tool by linking traditional admission and discharge information sources at a patient level to describe the experience of specific populations in the system. Appendix D presents a detailed overview of the methods employed. This produced advanced forecasts of incidence, prevalence, mortality and survival, and future demand and activity. While only a few examples of new data and improved analytical capabilities are presented in the Ontario Cancer Plan, it is important to note that more detail is (and, with some additional investments in information management, will continue to be) available for planning and decision making purposes at provincial, regional and organizational levels.

The new statistical projections of disease-specific incidence and prevalence, and the subsequent activity analysis were first tested and then prototyped for the *GTA 2014 Cancer Report*. These projections have since been further refined and broken down at a regional level, to provide each region with the best available data on cancer incidence and mortality. Planning regions were defined by Cancer Care Ontario based on a grouping of counties associated with existing or emerging Integrated Cancer Programs (ICPs). Cancer Care Ontario provided each regional planning group with a set of data as the basis for their planning efforts. This was the first time that such extensive regional data were available and comparisons between each region could be made to identify variations and disparities.

We know that cancer is the second leading cause of death in Ontario

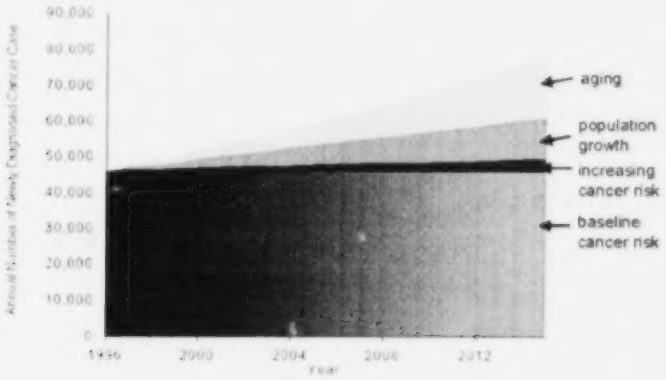
- Cancer is the number one cause of potential years of life lost in people under 40 and is the leading cause of death for those under 50 years of age
- In Ontario, it is estimated that 25,000 people will die from cancer this year. This is equivalent to 70 deaths each day, or one death every 20 minutes
- 2 out of 3 Ontario households have a family member who has been affected by cancer
- The number of new cases of cancer is rising, related to population growth, aging and increasing cancer risk factors
- 85% of new cancer cases occur in people aged 50 and older. This population is growing at an average rate of 2.5% a year (compared to 1.2% for the overall population)
- Survival has been improving for many cancers over the past 20 years, and this pattern is anticipated to continue. This is largely attributable to better treatment and effective early detection.
- Ontario's survival rates are comparable to neighbouring jurisdictions; however, we need to know each patient's cancer stage at diagnosis to improve the utility of this information

The challenge will continue to grow

Cancer Incidence

Cancer is a major health problem in Ontario. The number of new cases of cancer (incidence) is rising. In Ontario, the incidence of cancer is expected to grow from 54,000 in 2004 to 74,000 in 2014; this translates into an annual increase of 2.8% in demand for cancer-related health services. This increase in incidence is likened to a glacier, with 90% of the increase fuelled by population growth and aging and only 10% by changing cancer risks (see Figure 1).

Figure 1: Growth in cancer incidence in Ontario 1996 to 2014

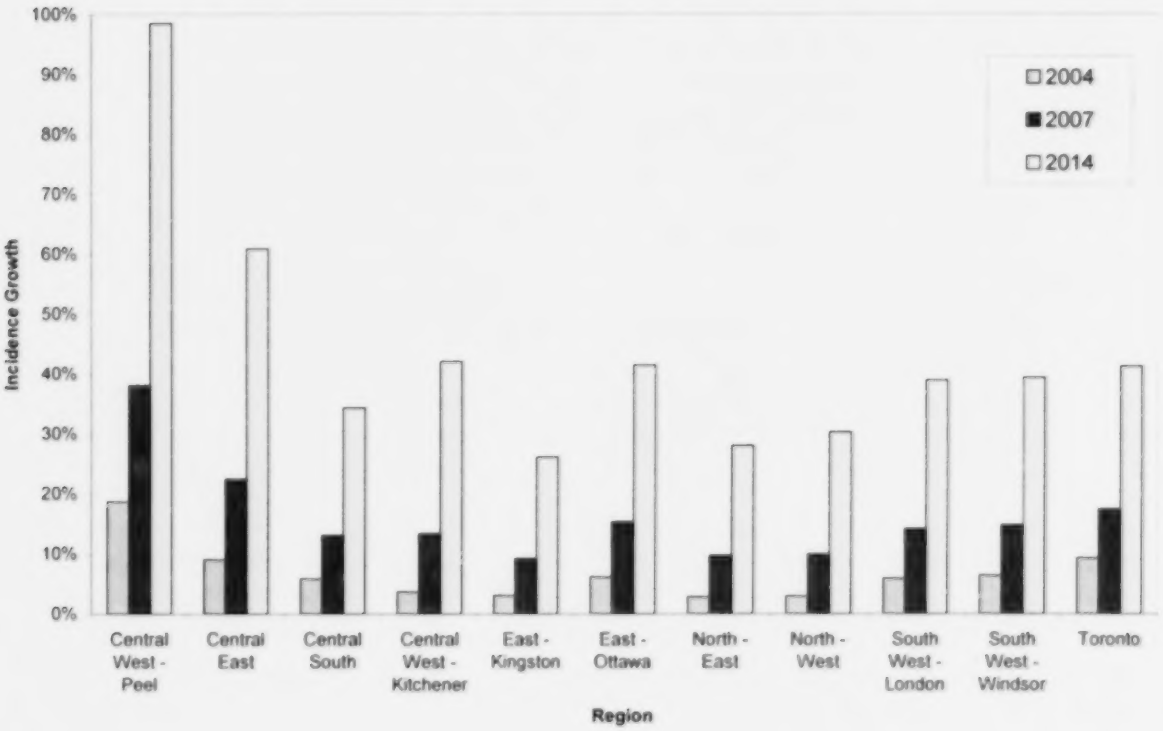


Source: Cancer Care Ontario (Ontario Cancer Registry, 2004)

Three contributors to cancer incidence: population growth, aging and cancer risk

1. **Population Growth** – There are marked differences in population growth among regions in Ontario. Figure 7 shows the growth in the incidence of cancer by region. Not surprisingly, the greatest growth is in communities surrounding Toronto, including Peel, York, Durham and Kitchener-Waterloo. These communities are projected to continue growing, yet currently have very limited cancer services locally, with regional cancer programs either in the planning or development stage. A significant investment in these and other communities is critical in order to meet the increase in demand for cancer services associated with this population growth. While Peel may show the greatest percentage growth, the most number of individuals will be in Toronto, where the population is larger.

Figure 7: Cancer incidence growth by region from 2001



Source: Cancer Care Ontario (Ontario Cancer Registry, 2004)

2. **Aging** – A staggering 85% of new cancer cases occur in people aged 50 and older, an age group that is growing at an average rate of 2.5% a year compared to 1.2% for the overall population. This means that cancer is growing disproportionately to population growth, largely as a result of the aging of baby boomers.

3. **Cancer Risk** – Risk factors for cancer include smoking and exposure to second-hand smoke, diet, sun exposure, and a lack of exercise, among others. Overall cancer risk has been increasing at the rate of 0.25% annually since 1980, but more recent data indicate that cancer risk has actually declined slightly since 1991.

Figures 8 and 9: Drivers of the increase in cancer incidence, York Region and Niagara Region 1996 to 2014

Figures 8 and 9 show how the combination of population growth, aging and the prevalence of cancer risk factors drives regional variation in cancer incidence. For example, in York region, population growth and aging appear to contribute equally to the increasing number of cancer cases with a negligible contribution from risk factors, whereas in the Niagara region, aging – and to a lesser extent increasing cancer risk and population growth – drive a smaller increase in incidence. This level of detail is crucial to understand how best to focus, con and manage services within each region.

These figures show how larger provincial trends do not adequately describe any particular region. This degree of local understanding was used to develop the capacity-related recommendations in the Ontario Cancer Plan and in the future will inform the proposed Local Health Integration Networks (LHINs).

Figure 8: York Region (both sexes, all sites)

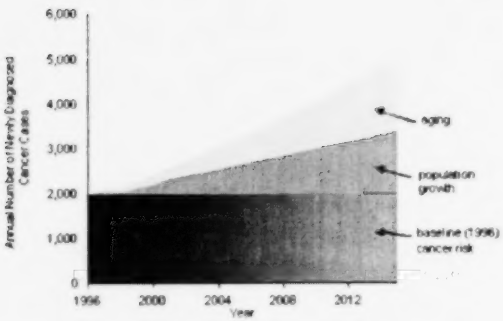
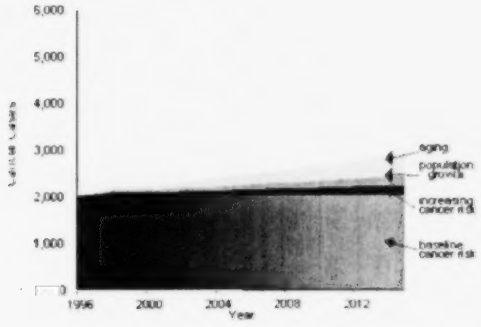


Figure 9: Niagara Region (both sexes, all sites



Source: Cancer Care Ontario (Ontario Cancer Registry, 2004) & PIAMOD: Prevalence and Incidence Analytic Model, Verdecchia et al. 2002

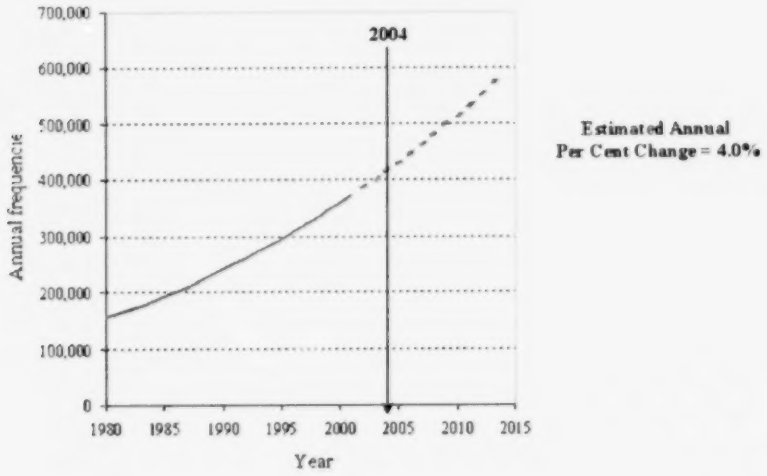
This analysis of population growth, aging, and cancer risk factors underlies our recommendations concerning where and when to add treatment capacity. Local areas show moderately different rate of incidence growth.

Survival, Prevalence, and Mortality

In Ontario, the five-year survival rate for the majority of cancers now exceeds 50%, and for some cancers (breast and prostate) is approaching 90%. Lung cancer survival rates remain steady, at less than 20%. The overall survival rate has steadily improved over the past 20 to 30 years, and the positive trend is anticipated to continue over the next 10 years, largely because of effective early detection and better treatment. Survival rates in Ontario are comparable to neighbouring jurisdictions in Canada and the U.S.

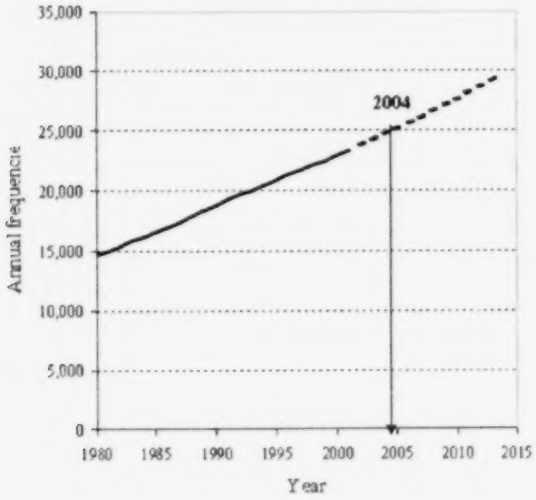
The number of people living with, and dying from, cancer is expected to grow significantly. Over the next three years, the number of people living with cancer will increase from 410,000 to 460,000, and an estimated 25,000 people will die from cancer in 2004. Figures 10 and 11 show the growth in prevalent cancer cases and cancer deaths. *Note*: The number of people living with cancer can also be broken down into the four major cancer sites – colorectal, lung, breast and prostate cancers – and all other sites (not shown). These data allow for even greater precision in forecasting service needs.

Figure 10: Time trends of prevalent cases of cancer in Ontario (all sites combined, ages 0-89 years, sexes combined)



Source: Cancer Care Ontario (Ontario Cancer Registry, 2004) & PIAMOD: Prevalence and Incidence Analytic Model, Verdecchia et al. 2002

Figure 11: Time trends of the number of cancer deaths in Ontario (all sites combined, ages 0-89 years, sexes combined)



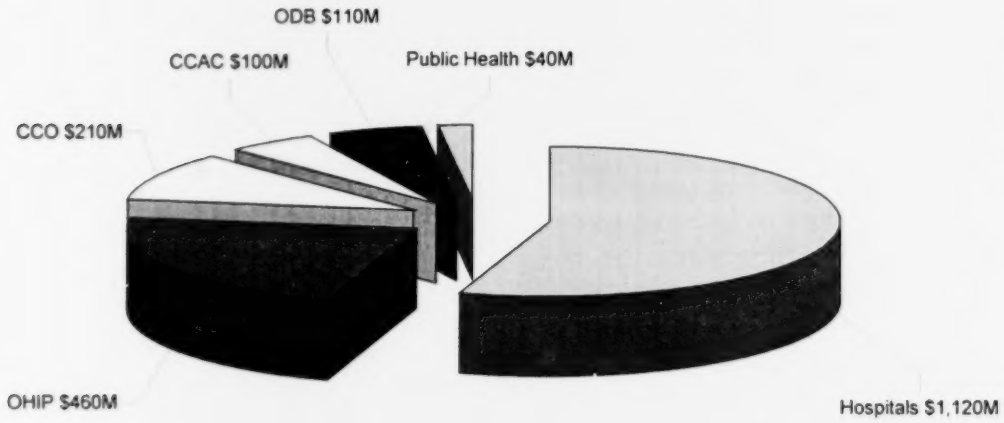
Source: Cancer Care Ontario (Ontario Cancer Registry, 2004) & PIAMOD: Prevalence and Incidence Analytic Model, Verdecchia et al. 2002

The increases in incidence, prevalence and mortality will place increasing demands on services within each phase of the cancer journey and in each region.

The cost of cancer

- Ontario spends approximately $2-billion per year on cancer services. The distribution of these funds to services is shown in Figure 2. Appendix D presents a detailed overview of the methods employed.

Figure 2: Ontario 2004/2005 estimated expenditures on cancer care of $2-billion



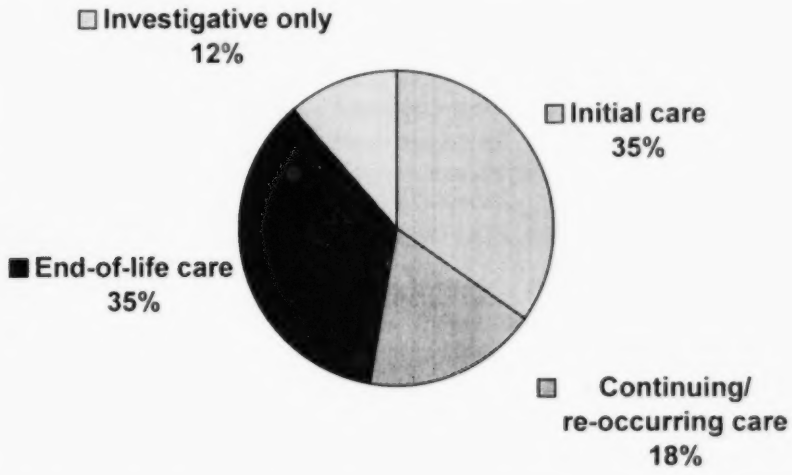
Source: Cancer Care Ontario, 2004

- When all costs are considered, Cancer Care Ontario and Princess Margaret Hospital in Toronto account for approximately 20% of traceable costs the Ontario cancer system[10]. The remaining 80% of costs are attributed to more than 100 Ontario hospitals and community agencies.

- Indirect costs of cancer, including loss of productivity, are estimated at $5-billion in Ontario[11].

- In-patient and day surgical costs account for the highest proportion of expenditures. New methods of analysis can tie incidence, prevalence and survival statistics to phases of care for in-patient and day surgery activity. These are illustrated in Figure 12 below. Costs are highest for activity associated with initial and terminal phases of cancer care. There may be opportunities to reduce these costs through the use of standards and guidelines, new models of care, and increased access to community supports including specialized end-of-life care.

Figure 12: Distribution of resources (PACs) by phases of care (example of hospital in-patient & day surgery resource patterns)



Sources: Cancer Care Ontario (Ontario Cancer Registry, 2004) and CIHI DAD File FY2001/2002

Cancer in children

Childhood cancer differs substantially from adult cancers. The most common cancers in children are leukemia, brain tumours, lymphoma and a group of solid tumours that differ from similarly named tumours in adults. Since the management of childhood cancer depends on other pediatric specialties, care is provided in pediatric centres in Ontario's five academic health sciences centres. Due to the low volume, high intensity nature of childhood cancer, planning for this population occurs provincially. The five academic centres, along with a number of community partners, make up the Pediatric Oncology Group of Ontario (POGO). At the request of the Ministry, POGO is developing a separate provincial plan on childhood cancer. There is a need for the two systems to work together to ensure a high quality of service in the child/adult transition years (15 to 29 years of age) that fall between pediatric and adult hospitals.

3. Quality concerns
Cancer care and services in Ontario

- Concerns about quality are well documented and have been validated in a variety of reports
- Patients experience gaps in dissemination of information, the provision of supportive care and in access to and delivery of services
- There is a quality relationship between service volume and outcomes for some cancers
- Cancer services are generally not organized to facilitate consultation and referral of complex problems
- Waiting times continue to increase for cancer surgery, radiation treatment and systemic therapy
- Human resource shortages exist in a number of key disciplines

Cancer is a serious concern for Ontarians

Two of every three households in Ontario will have someone in their family affected by cancer at some point. The experience is so common that almost everyone has a story to tell about someone they know and love who lived through cancer treatments, and/or who died from the disease. They usually talk of the high quality and compassionate care that is given each and every day throughout Ontario by teams of knowledgeable, skilled and committed professionals. Other stories however are not as positive. These stories include examples of people waiting at every point of care; people getting duplicate tests and work-ups as they move from institution to institution or provider to provider; people falling through the cracks as the "system" fails to ensure that all the appropriate information for clinical decision making is shared appropriately and available in a timely and useful way; and finally, people who receive a different level of care depending on where they live.

In December 2003, the Canadian Cancer Society (Ontario Division) published *Breaking Down the Barriers*, a study on the needs of cancer patients and their families. The study found major gaps in the dissemination of information, the provision of supportive care, and in access to, and delivery of services. Specifically the study showed:

- Patients described "long wait times for diagnostic tests and specialist appointments, fragmented and rushed delivery of care and the lack of services close to home and after hours"[12]
- 50 to 60% of cancer patients do not have their information and communications needs met
- Communication with health care providers is problematic for patients
- Only half of those reporting an emotional support need indicated that their need had been met

- Better support for daily living in the home and better coverage for home care are required. Over half of the survey respondents reported a need for home care but 42% had not had this need met
- Approximately 30% of those who required time off work were unable to take that time

The consensus from the surveys and the focus groups conducted as part of the study is, "that the current system is fragmented and not continuous, creating an environment where patients and caregivers must be their own advocates in navigating the system."[13]

Cancer service challenges are well documented

Since 2001, six reports have validated problems and issues in the cancer system in Ontario. There is a high degree of consistency among the reports on what the problems are and what type of action needs to be taken to address them. The reports provide a thorough understanding of the issues associated with the impact of poorly co-ordinated services, quality gaps, gaps in knowledge and lack of investment in key areas such as prevention and screening. They also provide direction on how to address specific issues related to service access and wait times, needed investments in information management and prevention and screening, and how to build strong regional cancer programs. These reports include:

- Cancer Services Implementation Committee[14]
- *Partners in Care: Building a Quality Improvement Coalition*[15]
- *Cancer 2020: Targeting Cancer: an action plan for cancer prevention and early detection*[16]
- *Strengthening the Quality of Cancer Services in Ontario*[17]
- *Gaining Access to Appropriate Cancer Services: A Four-Point Strategy to Reduce Waiting Times in Ontario*[18]
- *GTA 2014 Cancer Report*[19]

Addressing the quality gaps

It is clear from the evidence, as well as from the results of cancer planning that the delivery of cancer services needs to be transformed to meet the current and future demand for cancer care in Ontario.

1. Variable quality

In the CQCO report, *Strengthening the Quality of Cancer Services in Ontario*, statistics clearly show that access to cancer services is deteriorating and that there are discrepancies between existing practice standards and actual care delivery. Two representative examples are volume-outcomes and uptake of guidelines.

a. Volume-outcomes

There is a strong and well-documented relationship between the number of surgeries performed (volume) and the success of the surgery (outcome). Figure 13 depicts the volume-outcome relationship for people undergoing pancreatic cancer surgery.

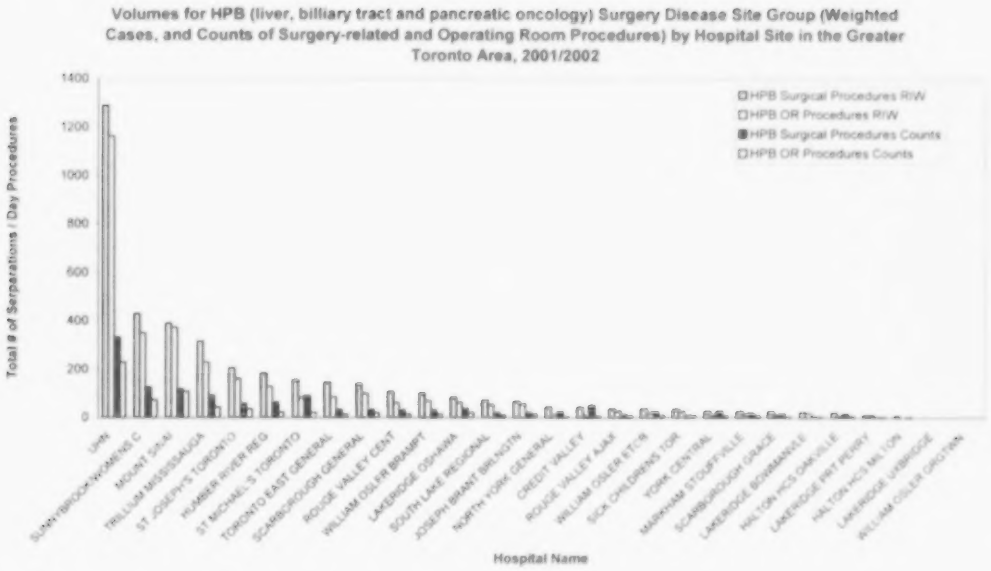
Figure 13: What we know – volume vs. case fatality rates following pancreatic resection for neoplasm[20]

Volume vs Case Fatality Rates Following Pancreatic Resection for Neoplasm

Author	Region	Years	N	Case Fatality Rates (%)		
				Tot	LoVol	Hi Vol
Gordon	Maryland	88-93	579	7.7	8.9-19.1	2.2
Lieberman	New York	84-91	501	12.2	11.8-18.9	4.0
Glasgow	California	90-94	1705	9.9	8.2-14.1	3.5
Simunovic	**Ontario**	**88-94**	**842**	**11.4**	**12.8-14.4**	**3.4**

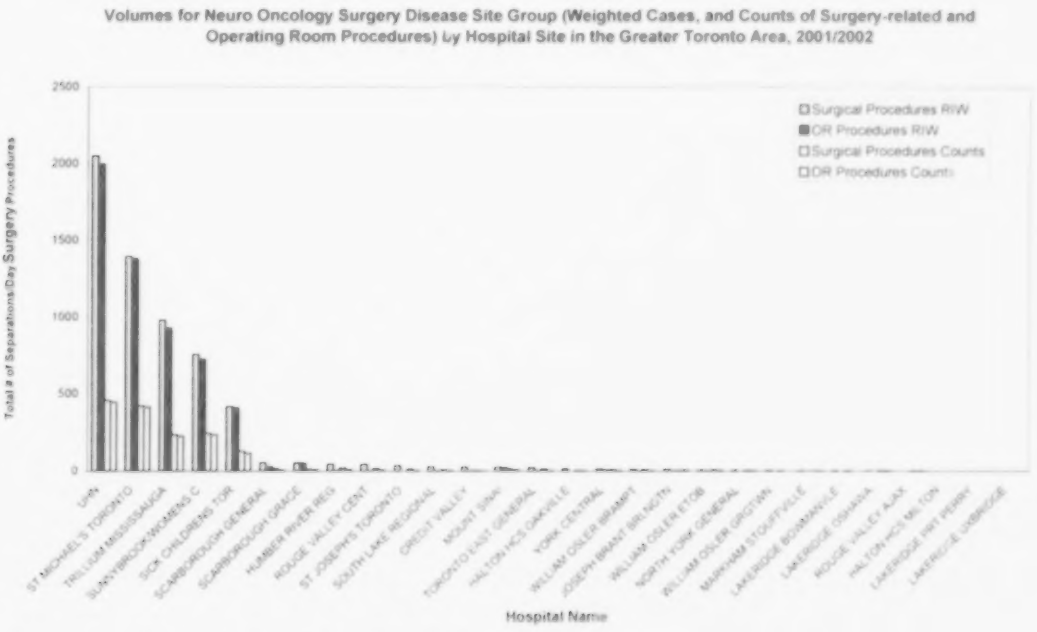
Essentially, the more pancreatic cancer surgeries that an institution performs (high volume), the better the result (good outcome). However, we note that several years later, these studies have had limited impact on the distribution of pancreatic surgery, as well as liver and billiary tract surgery, in the GTA. Figure 14 illustrates that this surgery is broadly distributed among GTA hospitals, with several hospitals performing low volumes.

Figure 14: What we do



Source: CIHI Discharge Abstract Data 2001/2002

Figure 15: What we should do...an example of how neuro oncology surgery has been consolidated in a few centres



Source: CIHI Discharge Abstract Data 2001/2002

This is in marked contrast to neuro-oncology volumes in the GTA – illustrated in Figure 15 – which are appropriate highly concentrated volumes at five hospitals.

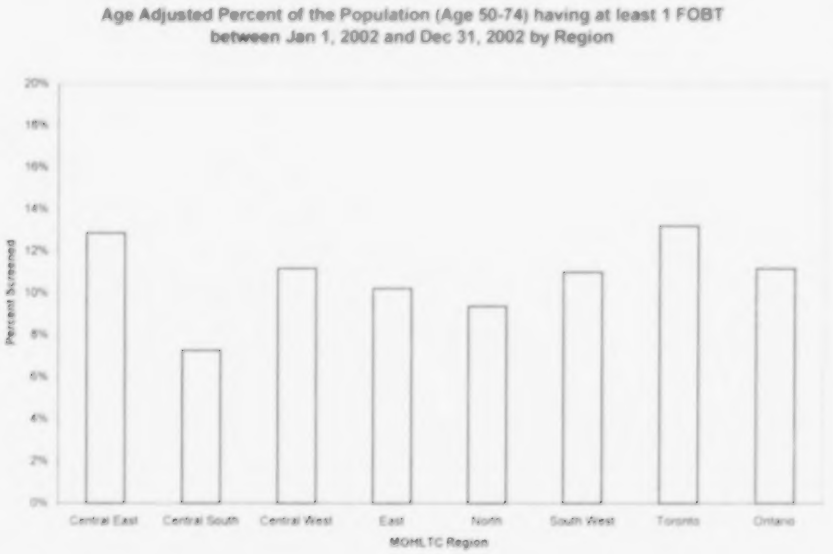
Other disease sites that might be expected to benefit from regionalization of surgical services include:

- liver cancer
- lung and esophageal cancer
- gynecological oncology
- head and neck radical cancer
- sarcoma
- ocular cancer

b. Uptake of guidelines

Another example of the gap between what we know and what we do is apparent in poor colorectal screening participation rates. We know that screening for cancer can detect the disease in early stages when it can be treated more easily and with better outcomes. The Canadian Task Force on Preventive Health Care recommends screening for colorectal cancer – annual or biennial hemoccult testing for average risk patients over the age of 50 based on evidence of reduced mortality rates. Despite these recommendations and compelling evidence, screening rates in Ontario are below target levels. As described in Figure 16, colorectal screening rates are uniformly low across Ontario and are much lower than FOBT screening rates in the U.S (Table 1).

Figure 16: Regional variation and poor participation in colorectal screening activity



Source: OHIP & Statistics Canada Population Estimates 2001/2002

Table 1: Screening rates (U.S.): U.S. Centre for Disease Control survey data[21]

	Ever	Once within the last 10 years (preceding survey)
FOBT	44.6%	23.5%
Lower endoscopy	47.3%	43.4%

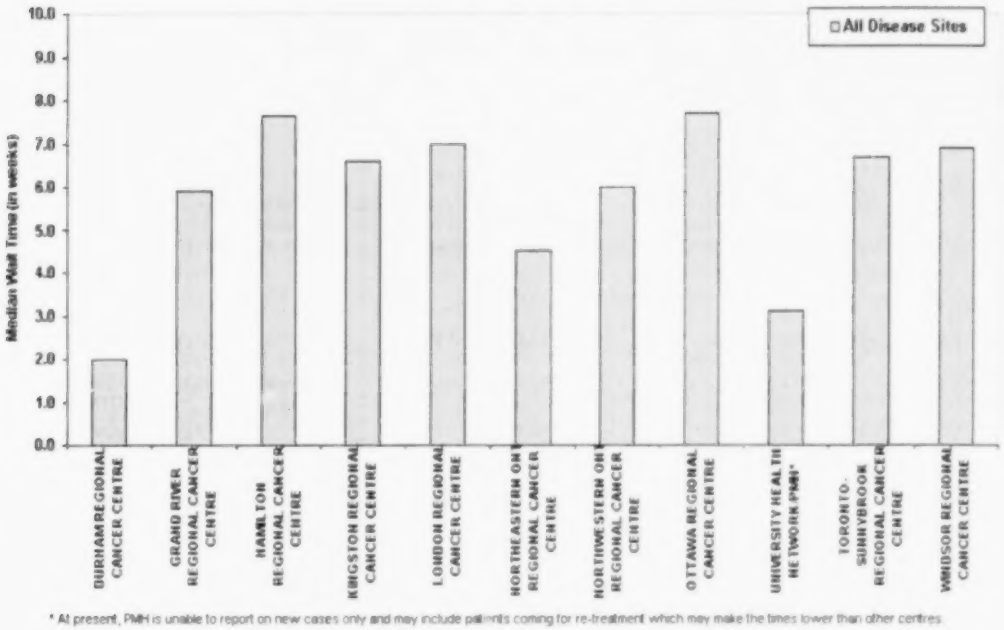
2. Ontarians are waiting too long for services

There have been two large-scale crises related to waiting lists for radiation therapy for cancer in Ontario. Despite swift response by the Ministry and Cancer Care Ontario, it is generally accepted that people in Ontario wait longer for cancer services than they used to, and longer than recommended by expert bodies. This includes waiting for diagnostic services, cancer surgery, radiation therapy and systemic therapy.

The time that a patient waits, from the moment of referral for radiation therapy until the start of treatment, continues to increase. For example, the median waiting time from referral to start of radiation therapy for all regional cancer centres increased from 5.1 weeks in 1993 to 7.0 weeks in 2002[22]. In fact, the majority of Ontario patients will wait longer for radiation therapy than is recommended by the consensus-based targets established by the Canadian Association of Radiation Oncologists (CARO). These targets are two weeks from referral to consultation; and two weeks from consultation to treatment. Figure 3 illustrates that the majority of radiotherapy cases are not treated within the recommended maximum waiting time.

In addition, evidence suggests that radiation therapy is under-utilized in Ontario, which means that capacity concerns may be larger than indicated[23]. For instance, about 20% of cancer patients who should receive radiation therapy do not actually receive it; anecdotal evidence suggests that this is due in part because people are unwilling or unable to travel for the recommended treatments, and/or patients are not always being referred for radiation therapy.

Figure 3: Radiation therapy wait times – Referral to treatment, 3-month rolling median, May to July 2004 (all Integrated Cancer Programs, all disease sites)



* At present, PMH is unable to report on new cases only and may include patients coming for re-treatment which may make the times lower than other centres.

Source: Cancer Care Ontario (Activity Level Reporting, 2004)

Waiting times for cancer surgery have increased over the past decade and will likely continue to rise as a result of growing cancer incidence. The escalating median waiting time for breast, colorectal, lung and prostate cancer surgery (36%, 46%, 3.5% and 4%, respectively between 1993 and 2000) highlights the growing wait time problem with cancer surgery over the past decade and is depicted in Figure 17. The availability of timely information regarding cancer surgery is a critical issue – we are only able to assess access issues retrospectively. The most recent data available on waiting times for cancer surgery is from the year 2000. Investment in prospective data collection tools and analytic resources is required to better understand and monitor this component of the cancer system which is used by 80% of cancer patients.

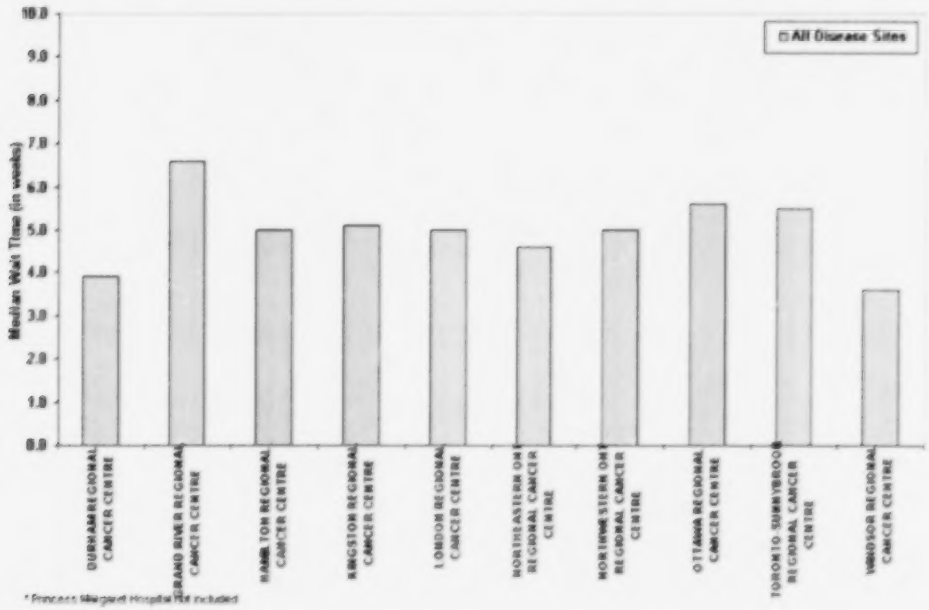
Figure 17: Median waits (consultation to treatment, in days) for major cancer surgery in Ontario (1993-2000)

	1993	1994	1995	1996	1997	1998	1999	2000
Breast	14	15	14	15	16	16	18	19
Colorectal	13	14	14	14	15	16	19	19
Lung	25	26	28	27	29	32	33	34
Prostate	80	83	96	107	99	99	92	83

Source: Simunovic et al., 2003

The median time a patient waits from referral to a specialist to the start of systemic therapy (usually chemotherapy) at an integrated cancer program has increased at a rate of approximately four days per year between 1999 and 2000, largely as a result of a shortage of medical oncologists[24]. Figure 18 illustrates the waiting times for systemic therapy for the 50th percentile (half) of patients by cancer treatment centre. Again, the available information is limited. Less than 50% of treatment is represented. Investment in data capture tools for the remainder of the service delivery system is required to better manage and monitor care provision.

Figure 18: Systemic therapy wait times - referral to treatment (median – 50th – for April to June 2004 (Q1-2004), all ICPs, all disease sites – does not include Princess Margaret Hospital or community hospitals)



Source: Cancer Care Ontario (Activity Level Reporting, 2004)

3. Health human resources

Like all sectors of the health system, Ontario's cancer system is experiencing serious health human resource challenges. There are shortages in several professions, little innovation in deploying human resources in service delivery, and limited use of alternative payment plans.

There are a number of reasons underlying the mismatch between service demand and the supply of human resources. On the demand side, there is an increase in the number of cancer patients. The supply side fluctuates because of shifting work and demographic patterns of health professionals, technologic and scientific innovations, and changes in the organization and delivery of health care services.

Moreover, there are no valid and reliable data on the number and type of health professionals whose work is primarily focused on cancer. A comprehensive picture does not exist of the professionals working in cancer care, their key demography, where they work, or what roles and functions they perform. Cancer Care Ontario's rudimentary attempt to capture data has been limited by the fact that several groups of professionals were not included, such as pharmacists, surgeons, social workers, dieticians or rehabilitation professionals. Investments in data capture and information management tools are required to address these issues.

There are legitimate concerns that there are insufficient numbers of appropriately trained staff to care for cancer patients now and in the future. This is true in both the hospital and community sectors. For example:

- An aging population of oncologists and oncology nurses will lead to a significant number of retirements.
- Medical laboratory technologists, medical radiation technologists and other allied health professionals play a vital role in diagnostic and therapeutic services. Efforts must be made to avoid critical shortages in these professions.
- Radiation therapists will increasingly be required to staff the new and proposed radiation facilities and facility expansions. Currently, enrolment in training programs is less-than-capacity in some programs.
- Many pathologists are nearing retirement. Although the Ontario Association of Laboratory Medicine has an aggressive campaign to attract students to the profession, there are not enough residency slots for the number of applicants. Pathology is critical to diagnosing cancer and is the starting point for cancer patients' treatment experience.

A number of other human resource innovations need to be considered in cancer care.

- Family physicians and primary care nurse practitioners could assume specific aspects of cancer-related care for their patients in the community (e.g., follow-up care).

- Pharmacists could assume expanded roles in cancer care. Oncology pharmacy is a small segment of the overall professional population, but pharmacy technicians could be trained in cancer treatments to free up the time of the pharmacist to fulfil clinical, counselling and educational roles in cancer care. The mandatory quality assurance program for pharmacists would need to differentiate between community and hospital practice, and allow for specialty peer review.

More innovation is needed. Interdisciplinary teams have particular challenges because of attitudinal or philosophical differences between the disciplines, the 'blurring' of roles, and the need for leadership and support for transformative change.

4. Priority 1
Provincial standards and guidelines

- Keeping pace with new cancer treatment evidence is challenging
- Implementation of standards and guidelines for cancer care will ensure that people with cancer get care that is based on the best available evidence
- Standards and guidelines for cancer care in Ontario must be expanded based on current evidence
- Dissemination and uptake of best practices by all clinicians needs to be improved
- Regions across the province asked Cancer Care Ontario to lead guideline development and uptake improvements

Cancer services are provided by many talented, dedicated professionals at good quality healthcare organizations across the province. Efforts are being made every day to create and capitalize on the innovations gleaned from clinical research and new technologies and treatments. In spite of these efforts, evidence shows that there are serious quality gaps in Ontario's cancer system that must be addressed.

The U.S. National Quality Forum (NQF) summarizes the impact of quality problems, such as those identified by Cancer Care Ontario in the following statement:

> *"Quality deficiencies result in increased mortality and morbidity and in failure to alleviate conditions that cause pain and disability, leading to a lower quality of life, less productive work force and millions of dollars in unnecessary costs."*[25]

For the cancer system in Ontario, where the direct costs of cancer care are thought to be about $2-billion, the impact of a quality improvement agenda could be substantial. The NQF has identified four principal indicators of quality problems:

1. Inappropriate regional variation in use of clinical services
2. Error rates
3. Over treatment
4. Under treatment[26]

A recent Canadian study of adverse events examined medical records in hospitals in British Columbia, Alberta, Ontario, Quebec and Nova Scotia[27]. The study found an adverse event rate of 7.5 for 100 hospital admissions, of these approximately 37% were preventable[28]. The consequences of these problems are profound and well documented.

These quality problems are caused by many different factors, some of which have been lingering in the system for many years. There is no magic bullet that will lead to solutions that fix these problems; rather a series of multiple results-oriented initiatives are required to effect sustainable and visible change.

Keeping pace with best practice evidence for cancer is demanding

Over the past 15 years, there has been an explosion of knowledge about the large group of diseases that comprise cancer and their appropriate treatment. Without appropriate supports, it is very difficult for individual cancer clinicians, practicing in a variety of different care settings, to stay abreast of the vast amount of new clinical information. This can result in wide variation in cancer practice which places patients at risk of not getting the best care.

Keeping pace with evidence – examples

Cancer Surgery

80% of cancer patients require surgery. The quality of surgical care directly influences the subsequent clinical pathway. Ontario patients referred for a surgical opinion and treatment may have widely differing experiences in accessing surgical care, in the level of surgical expertise encountered and in the appropriate non-surgical component of their care. There is considerable variation in surgical practice models and processes, ranging from solo practices in which cancer surgery may be a small part of a surgeon's practice, to a variety of loose collaborative practice arrangements, to highly structured and cancer-focused specialty groups. Approaches to treatment vary as does the extent to which multidisciplinary consultations and care teams are used to provide care. In some cases, perioperative mortality rates, lymph node sampling in breast and colorectal cancer surgery, or quality of surgical margins can indicate quality variations in surgery.

Systemic Therapy

Community hospitals play an important role in providing systemic therapy to local residents. This practice has enabled care to be provided closer to home. While beneficial for patients, it is increasingly difficult to attract and retain a sufficient number of medical oncologists in community settings. Medical oncologists practicing in smaller settings tend to have a "generalist" oncology practice and provide a variety of services, in addition to systemic therapy, for a wide variety of tumour types. They may be isolated in terms of peer support and may not be able to take advantage of, or have access to, targeted continuing medical education or opportunities for sub-specialization. New therapies are rapidly increasing the complexity of systemic treatment, adding to the challenge of maintaining high quality care. Computerized order entry systems can support a comparison of systemic therapy practice with evidence-based guidelines. These systems can also support the direct integration of guidelines into bedside tools to facilitate decision making. They exist in Ontario but are limited in their application.

Current capacity to interpret and communicate cancer evidence in Ontario

Ontario's internationally renowned Program in Evidence-Based Care (PEBC), develops, disseminates and evaluates knowledge synthesis products. The PEBC has recognized a need (confirmed through the Ontario Cancer Plan) for practice guidelines and other knowledge products for parts of the cancer system not previously addressed.

Cancer Care Ontario's PEBC develops evidence-based clinical practice guidelines. The guidelines are up-to-date statements of the best cancer treatment options available based on clinical and scientific evidence. They are used to support decision making at clinical and policy levels. An excellent example is the development of clinical practice guidelines for anti-cancer drugs, which form the basis for funding decisions for Ontario's New Drug Funding Program (NDFP).

Multi-disciplinary disease site groups are responsible for developing the guidelines using a broad and consultative process. This has played a significant role in building a culture of evidence-based practice and enhancing uptake of the guidelines. Uptake is further encouraged through involving a large group of practitioners during the final review of guidelines, publication in peer-reviewed journals, ready access through the Internet, and regular updates of the guidelines. The publication of disease-specific monographs by Cancer Care Ontario has been a step forward, more needs to be done to translate knowledge into practice.

In 2003, Cancer Care Ontario established a Clinical Council comprised of clinical program leaders. It is mandated to:

- Establish and facilitate the implementation of clinical standards for the cancer system;
- Provide clinical input and approval for clinical indicators that can be used to measure the quality of cancer care;
- Monitor the impact of standards relative to practice change in Ontario;
- Through Cancer Care Ontario, advise the Ontario Ministry of Health and Long-Term Care on clinical cancer-related issues;
- Co-ordinate clinical input into the cancer care planning process;
- Develop and maintain ties with Ontario clinicians and other stakeholders as a foundation for the above areas of responsibility.

Both the PEBC and the Clinical Council are important steps in improving the quality of cancer services in Ontario.

Limitations of current capacity for evidence-based care in Ontario

When used appropriately, guidelines and standards can minimize inappropriate practice variations, support quality improvements, and optimize the use of scarce resources in the healthcare system. Standards and guidelines are used to support and manage the introduction of new drugs and new technologies into practice. However, it is important to maintain an appropriate balance of guideline coverage across the spectrum of cancer treatment. Ontario's existing clinical practice guidelines are focused mostly on anti-cancer drugs and radiation therapy, yet there is a need to increase expert guidance on the available evidence for other modalities of cancer treatment and care. Specifically, there are significant gaps in guidelines for diagnostic imaging, surgery, pathology, and supportive and palliative care.

Uptake of the guidelines is essential. Uptake can be assessed directly by measuring the concordance between guidelines and clinical practice. Measurement of this concordance is dependent on a broad and sophisticated data set and analytic resources. A recent guideline concordance report revealed a high degree of consistency between Cancer Care Ontario's clinical practice guidelines for stages 3 and 4 colon (and rectal) cancer and clinical practice in eight regional cancer centres[29]. However, it was estimated that provincially, up to 50% of patients with stage 3 colon cancer were not receiving the recommended adjuvant chemotherapy after surgery. This variation suggests a knowledge gap related to the benefits of systemic therapy and a failure to refer. Even within the specialized cancer centres, important areas of variation in clinical practice have been identified. For instance, only 28% of rectal cancers seen in the province's regional cancer centres received curative radiotherapy and only 15% of those receive pre-operative radiotherapy, even though both are recommended as best practice[30]. A superficial analysis would suggest that these percentages are too low but further investigation is necessary to interpret these seemingly poor results. And further investment in information systems is required to measure and monitor concordance with other critical practice guidelines.

There are other demonstrable examples where service is not consistent with well-documented guidelines and standards.

- Three Canadian expert bodies have recommended that men and women over 50 years be screened for colorectal cancer using the Fecal Occult Blood Test (FOBT). Surprisingly, Ontario screens less than 12% of its population in this age group[31].

- The Canadian target standard for breast screening is that at least 70% of women between the ages 50 and 69 are screened every two years. In Ontario, only 40% of eligible women have had a mammogram in the past two years[32].

The system must improve guideline coverage across the spectrum of cancer treatment, and make concerted efforts to improve the uptake of existing and future guidelines and continue to invest in systems and tools to support and monitor uptake.

Broad, regional support for improving guideline coverage and uptake

The regions, in their local planning activities, identified several priorities including:

- Developing provincial standards of practice, by disease site and stage, for diagnostic imaging for cancer patients. This would address anecdotal evidence that there is a high degree of variation in practice and perhaps even significant amounts of over-testing in some cases*;
- Developing provincial standards for cancer-related pathology reporting, which has been shown to improve quality and efficiency in other jurisdictions and will support vastly improved data capture for planning quality monitoring and research;
- Developing evidence-based provincial guidelines for radiotherapy;
- Developing provincial standards for systemic therapy, radiation treatment and surgical oncology;
- Developing clinical indicators to measure the quality of cancer surgery and clinical practice guidelines;
- Reviewing the extent to which standards related to supportive care* for cancer patients have been developed, disseminated and implemented, with an action plan to address any gaps that exist;
- Creating innovative opportunities to enhance patient safety, such as cultivating a quality and patient safety culture for cancer, developing quality standards and practices, and implementing Cancer Care Ontario's adverse events reporting system for radiotherapy.

Finally, some regions recommended organizing Ontario's providers into four discrete levels, from full-scale quaternary level of service to follow-up and management of straightforward complications of therapy. This recommendation is in keeping with the approach of the US Commission on Cancer (COC), which has developed categories of cancer programs, each with specific quality requirements. The COC standards identify criteria for services, residency positions, caseload, staff knowledge and skills, clinical trial participation rates and quality improvement activities.

**Note that these are areas of Ontario's cancer service delivery system for which there currently exists a dearth of data.*

Attention to standards and accountability for quality are critical success factors. The Commission on Cancer looks forward to working with Cancer Care Ontario in the future on new ways to collaborate on standards for regional cancer services - this is in effect the next generation of work.

– Dr. Frederick Greene – Chair-elect, Commission on Cancer, US, comments on the Ontario Cancer Plan (September 2004)

Action Plan #1

Cancer Care Ontario will promote an evidence-based culture in the cancer care community and facilitate continuing professional development and the rapid incorporation of new knowledge into practice

Description

Cancer Care Ontario's Program in Evidence-Based Care is proposing to use the results of its program evaluation results to refine existing products, and to develop new and innovative processes and tools to support knowledge transfer. Cancer Care Ontario will support the creation of communities of practice to foster quality improvement and knowledge transfer activities.

This work will focus on 14 existing disease sites and care domains, with a particular emphasis on surgery. Cancer Care Ontario will ensure timely production, dissemination, implementation, evaluation and updating of clinical practice guidelines, standards and planning tools. These activities will build upon the strong foundation provided by the PEBC and will require investment in data capture and analytic resources.

Deliverables – Years one to three

- Conduct systematic evaluation of current standards and guidelines and develop new products to support uptake of guidelines including: clinical algorithms, technical recommendations, standards, quality indicators, decision aids, summary bulletins, prompts, information technology aids, audit and feedback forms, policy and briefing sheets
- Identify specific areas of care where there are significant opportunities to realize quality improvements by building communities of practice and sharing best practices
- Develop new guidelines in identified areas of care, including patient safety
- Regularly produce systematic literature reviews on topics ranging from environmental and occupational exposures to nutrition to chemo-prevention, to support decision making at the policy and program level
- Complete evaluations, compile and implement best practices for community-based cancer prevention and screening, including research on behavioural correlation of cancer prevention and screening

Outcomes

- Increased production and use of clinical practice guidelines
- Increased compliance with quality indicators
- Decreased inappropriate regional variation in practice
- Increased participation in screening programs
- Increased appropriate use of resources, for example imaging and other investigations
- Increased appropriate referral of complex problems
- Improved patient access to the best care option available
- Improved access to services (decreased wait times)
- Decreased incidents of adverse events
- Increased number of collaborations among the PEBC and relevant key parties
- Implementation of a continuous quality improvement process to ensure effectiveness
- Create a culture of clinicians, planners and policy makers who are receptive to evidence and are able to apply and use evidence in making their decisions

Action Plan #2

CCO will broaden the scope of program standards and guidelines across the continuum of care, addressing known needs and opportunities in cancer-related imaging, pathology and palliative care

Description

Cancer Care Ontario will establish provincial programs that develop program standards, guidelines, quality indicators and accountability mechanisms, with an emphasis on diagnostic imaging, laboratory medicine and palliative care.

Deliverables – Years one to three

- Establish programs in three priority areas: diagnostic imaging, laboratory medicine and palliative care
- Enhance the multi-disciplinary provincial disease site groups to encompass a broader community of practice and enhance their terms of reference to include a broader range of products, stakeholders and knowledge translation activities
- Produce additional program guidelines, leading to increased awareness and compliance
- Establish program standards and related measures and quality indicators to evaluate program effectiveness and accountability mechanisms including identification and sources of information required for program monitoring
- Work collaboratively with other organizations and clinical leaders outside the cancer system on programs that share resources
- Continue to advance quality improvement in existing programs in prevention, screening, surgery, radiation, systemic therapy, supportive care, patient education and oncology nursing

Pathology

Anatomic pathology reports are the source of almost all cancer diagnosis and other crucial predictive/prognostic information including tumour sub-type, grade, molecular profile and stage. The identification and staging of cancer cases are essential for disease surveillance, program planning and quality monitoring._

Cancer Care Ontario is proposing that Ontario adopt cancer checklists from the College of American Pathologists as a basis for synoptic reporting of cancer specimens. A checklist-based system will ensure that essential data elements required for cancer management are included in the anatomic pathology record. Investment in the electronic pathology information management system will be required to support implementation of this standard.

Imaging

Imaging is required at all phases of care including initial diagnosis, staging, treatment and ongoing follow-up. Advances in imaging technology are having a significant impact on cancer screening and treatment. While Cancer Care Ontario has limited data on patterns of imaging practice in Ontario, there is anecdotal evidence of inappropriate test utilization, duplication and delays. This was confirmed by a small survey of providers in the GTA plan, which showed wide variation in physician use of imaging for the four major cancer disease sites. Cancer Care Ontario is proposing to:

- Establish a provincial program in cancer-related diagnostic imaging to make policy recommendations on improving access, quality and efficiency of these services
- Build a program to establish standards, guidelines and quality indicators that incorporate and enhance local, national, and international best practices, and are regionally implemented
- Oversee the development and evaluation of rapid access diagnostic units (RADUs)
- Work with practice leaders in other areas of health care that share a common imaging resource with cancer

Palliative Care

Currently less than 5% of Canadians have access to palliative care and those programs that exist remain unevenly distributed across the province. We know that:

- There is inequity of service access across Ontario[33]
- There are multiple providers of service with little or no co-ordination between them[34]
- Many patients undergo inappropriate resuscitation efforts, supported by advanced technology and under-treatment of pain and other symptoms in the palliative phase of care[35]
- There is no comprehensive, timely data available on need, availability and effectiveness of current services in Ontario

Cancer Care Ontario understands that the Ministry has endorsed *A Model to Guide Hospice Palliative Care* prepared by the Canadian Hospice Palliative Care Association. The Ministry has asked that Cancer Care Ontario use this model to guide the development of standards for cancer palliative care; and Cancer Care Ontario will develop cancer-specific palliative care standards in collaboration with the work of the broader provincial end-of-life strategy. (See Action Plan #5)

Cancer Care Ontario is also proposing to establish a provincial program in palliative care to make recommendations on improving access, quality and efficiency of services to cancer patients in the terminal phase of their disease. The program will work synergistically with the Ministry end-of life strategy both at the provincial and regional levels.

Outcomes

- Increased clinical intelligence in key program areas
- Increased evidence-based practice in pathology, imaging and palliative care clinical practice, thereby reducing wait times, improving access and improving effective use of resources
- Improved accountability mechanisms that promote high quality care

Action Plan #3

Expand the use of organizational standards to ensure that a consistent level of quality of cancer services is available throughout Ontario

Description

Organizational standards will add another important dimension to the Ontario Cancer standards. They will help drive improvements to the way in which cancer services are organized and delivered within organizations and within regions.

Organizational standards will set out the requirements necessary for an organization to be recognized by Cancer Care Ontario as a designated cancer service provider. There will be different designations assigned depending on criteria such as volume and complexity of cancer services provided, as well type of quality standards and processes in place.

Performance against organizational standards will help inform decisions about:

- Where incremental funds for new or expanded cancer services and programs should be allocated
- Where potential cancer providers may wish to practice
- Where consumers may wish to receive their care

As part of the regional planning process, organizations completed a self-evaluation of how they fared in relation to a set of criteria associated with attributes of high quality cancer service organizations. It is clear that there is considerable variation across the province in the level of quality supports within organizations.

Organizational standards are already in place for:

- Ontario Breast Screening Program (OBSP) - There are specific criteria and performance standards that those centres designated as hub or affiliate sites of the OBSP must meet in order to get funding, and be recognized as a partner in the Program.
- ICP Hospitals - These hospitals all have radiation centres, and have made commitments to implement provincial standards through agreement with Cancer Care Ontario.

Organizational standards should be put in place as part of the development of the regional cancer program agreements. Examples of organizational standards include (but are not limited to the following):

- Designated leadership and accountability for cancer services or programs within an organization
- Appropriate physical and human resources, organizational structure and support services
- Membership in a regional program (described in Priority #2)

- Timely collection of quality data that can be compared with other organizations and used for quality improvement activities
- Appropriate volume and scope of clinical services necessary to provide high quality cancer care and ensure good outcomes
- Participation in tumour boards
- Requirements to complete and report on staging of each patient
- Clinical trial accrual
- Sponsorship of quality improvement activities that have visible impact on quality, efficiency and effectiveness of care

Some of these examples are drawn from the experience of others, such as the US Commission on Cancer that have introduced this type of standard to drive quality, as well as from inputs derived from the regional cancer planning process.

Deliverables – Years one and two

- Consult stakeholders including key delivery organizations to develop organizational standards. Organizational standards should be part of the regional cancer program agreements, and link to Action Plan #4
- Develop model for different categories of designation that would be associated with different categories of standards to be applied
- Introduce a requirement that organizations meet standards as a condition for funding new or expanded cancer services / programs

Deliverables – Year three

- Monitor and report on the implementation of standards across Ontario

Outcomes

- Organizational standards defined and disseminated across Ontario that raise the level of consistent care delivery and provide the basis for performance monitoring
- High quality, consistent, timely, evidence-based care across the continuum of care for all cancer patients in Ontario

5. Priority 2
Regional cancer programs

- Cancer services are fragmented with the result that cancer patients often face sequential waits for service
- A regionalized system of care will help streamline the patient journey and lead to an improved patient care experience
- Every regional plan supported the need for an ongoing mechanism to bring together regional cancer service providers to enhance regional cancer programs
- Despite some examples of voluntary co-operation, cancer services are not regionalized
- A model of regional cancer services and a regional network of palliative care services are proposed

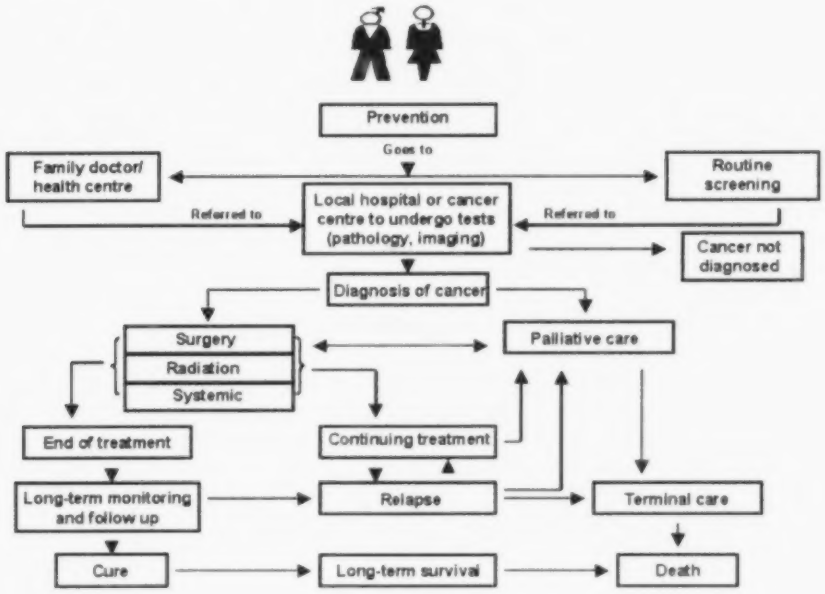
Regional Cancer Programs (RCPs)

Currently, regional cancer providers are loosely associated organizations that independently determine the range and volume of cancer services provided. Most often, services are planned from the provider perspective, with little input from patients and community stakeholders.

Organizations in each region compete for scarce human resources, such as specialized oncology nurses and physicians, as well as for specialized equipment, treatments and other supports for cancer programs

Furthermore, the patient journey from hospital to hospital, and from hospital to community care is complicated and complex. The system is difficult for patients to navigate, and they often wait too long at each point in the care process. (see Figure 19)

Figure 19: The cancer patient journey – Not a simple path to plan



Given the current state of the system:

- There is no way that a patient or their family can be assured in any objective way that the cancer services provided through organizations within their communities are of adequate quality.
- Less than 50% of cancer service organizations in Ontario are required to adopt provincial cancer standards and work with Cancer Care Ontario and its partners toward an improved cancer system. Funds currently flow unencumbered to these unaffiliated organizations.

Every regional plan indicated the continued need for service providers to collaborate to improve cancer service delivery within their region, addressing issues such as location, distribution and amount of service required to reach access and quality targets. Some regional plans went further, suggesting the kind of organizational structure that regional programs would use to offer patient-centred care. These include disease site networks or teams, communities of practice, clinical pathways and patient navigation supports and systems.

A new model of regional cancer services for Ontario

Regional cancer programs (RCPs) will take shape over the next three years. The RCPs are virtual programs and will link together providers, patients, organizations and decision makers from across the full spectrum of cancer care (prevention, screening, diagnosis, treatment, and supportive and palliative care) within a defined geographical area. Together they will focus on the common goal of improving access to quality cancer services within their communities. Services will continue to be delivered within individual organizations and agencies.

Cancer Care Ontario will invite cancer service providers within a region to join the program in a formal way. Agreements will be put in place among those who are joining together as organizational partners, and the agreements will establish a commitment to regional planning for cancer services, implementation of provincial standards, and performance reporting. The RCP model is presented visually in Figure 20.

The regional cancer programs will be responsible for:

- Leading a regional cancer service planning process, which will be part of a broader provincial cancer planning cycle led by Cancer Care Ontario
- Identifying strategies to meet local needs for service integration, co-ordination, and quality improvement
- Facilitating meaningful patient and consumer involvement in the planning and evaluation of regional program activities
- Fostering uptake of provincial standards by engaging providers through the dissemination of provincial standards and information about the region's performance relative to the standards
- Evaluating and reporting on performance of regional cancer programs and services
- Responding to performance results for the region that may include assessing where and how services are provided

Regional programs will be designed in a way that ensures optimal efficiency, consistency of quality and easy navigation of services across the continuum of cancer care.

Where possible, planning and delivery of services within the RCP will be done in a way that maximizes opportunities for collaboration and synergy with other activities in the health care system (for example, the proposed Local Health Integration Networks (LHINs), promotion of healthy lifestyles and end-of-life care).

Community involvement will be an important dimension of the RCPs. Cancer Care Ontario has a strong history of involving community partners in cancer service planning, and this approach will be strengthened even further. The guiding principles that support the development of the RCPs include active engagement of the community in planning and evaluating the program. In addition to seeking ongoing input from community partners, the RCPs will likely hold two public sessions each year to

highlight their progress and solicit feedback on key issues. One of those sessions will tie in to the public release of reports on cancer system performance, published by the Cancer Quality Council of Ontario.

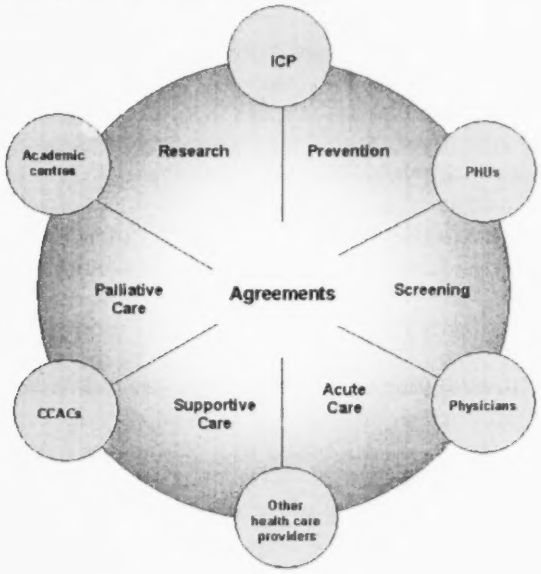
Figure 20: Overview of Regional Cancer Programs

At the end of 2008:

- RCPs will be in place for every region of the province
- Each regional cancer program will address needs across the full spectrum of cancer care: prevention, screening, diagnosis, treatment, and supportive and palliative care
- Patients, consumers and volunteers will play a meaningful role, along with providers, in the development and evaluation of the regional cancer program
- Everyone will be clear about which services are available in the various organizations, and how services are connected to one another. Organizations will work together to plan for cancer services, and to provide them in the most efficient and cost effective way
- There will be agreements in place among all the organizational participants in a regional program to ensure that Ontario cancer standards are implemented effectively
- Funds for new or expanded cancer services will be provided only to those who have agreed to be part of an RCP
- There will be regular reports to the public, funders and policy makers about the quality of services within each regional program and how they compare with other jurisdictions

highlight their progress and solicit feedback on key issues. One of those sessions will tie in to the public release of reports on cancer system performance, published by the Cancer Quality Council of Ontario.

Figure 20: Overview of Regional Cancer Programs



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- There will be regular reports to the public, funders and policy makers about the quality of services within each regional program and how they compare with other jurisdictions

Action Plan #4

Implement patient-focused regional cancer programs in every area of the province

Description

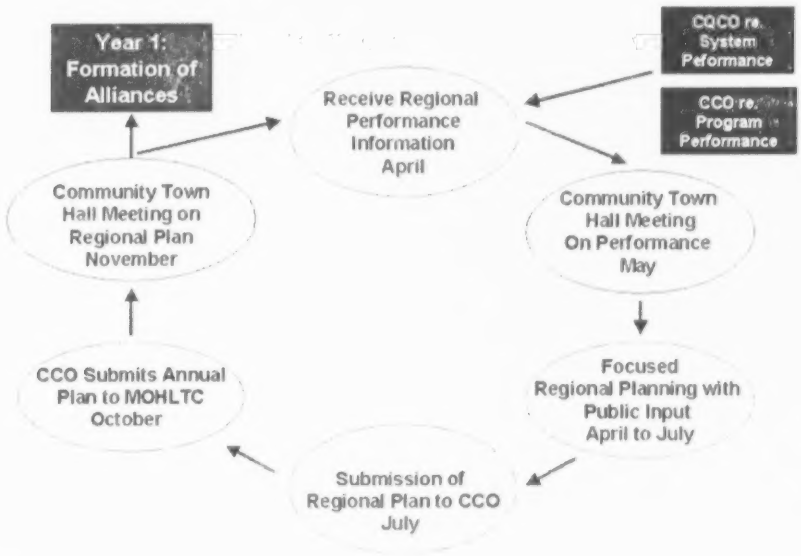
Cancer Care Ontario will advance patient-focused RCPs across Ontario by bringing together regional cancer service providers and consumers to work collectively to achieve the goals of the regional cancer program.

Deliverables – Years one to three

- Initiate the formation of a true cancer system through regional programs that is more identifiable and accessible to patients
- Establish arrangements and agreements that clarify leadership, membership, roles and responsibilities of all parties associated with the RCPs to meet and address local needs and provincial standards (disease, program and organizational)
- Refine boundaries of the regional programs once proposed Local Health Integration Networks (LIHNs) are in place
- Fund ongoing planning and development of initiatives led by the RCPs. Regional cancer service vice-presidents will administer such funds on behalf of Cancer Care Ontario and the regional program
- Introduce the requirement that any funds for incremental growth of cancer services will require that organizations have a formal association with Cancer Care Ontario and the RCPs
- Develop principles for meaningful public participation. Partner with the community to ensure dynamic and creative opportunities for increased public input into the development and performance of RCPs. RCPs will be required to report on ways in which they involve the public and other stakeholders, as part of their annual report to Cancer Care Ontario (and to the proposed LHINs) and their communities
- Support RCPs in determining how best to organize so they will be able to deliver on the expectations outlined in a formal agreement
- Establish full complement of RCPs by April 2005 to build on momentum and relationships established through the cancer planning process
- Integrate the work plan of the RCPs with the business planning cycle, the release of the annual Cancer Quality Council of Ontario report on provincial and regional cancer system performance, and Cancer Care Ontario production of program performance (see Figure 21)

- Institute regular reporting on the progress and performance of RCPs to all organizations participating in the program, the Cancer Care Ontario Board, and LHINs (as they are formed)

Figure 21: Regional cancer programs – annual activity cycle

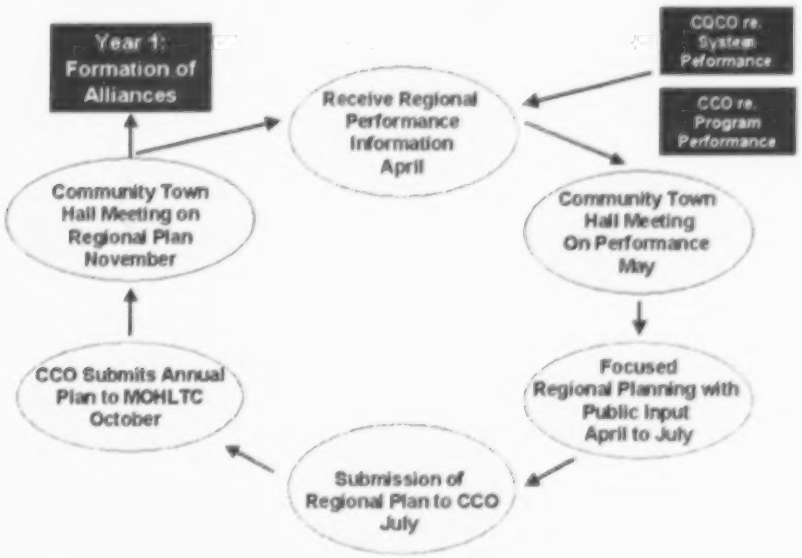

Year 1: Formation of Alliances
Receive Regional Performance Information April
CQCO re. System Peformance
CCO re. Program Performance
Community Town Hall Meeting On Performance May
Focused Regional Planning with Public Input April to July
Submission of Regional Plan to CCO July
CCO Submits Annual Plan to MOHLTC October
Community Town Hall Meeting on Regional Plan November

Outcomes

- Patients and their families are assured that services offered in the community are monitored and of high quality
- A system of cancer care that is more easily navigated by the cancer patient and their primary care providers
- Increased number of organizations formally committed (by means of agreement) to function as part of the RCPs
- Increased use of provincial disease site guidelines, and program and organizational standards for cancer care within the regional programs
- Increased capture of data required to support ongoing measurement and evaluation of cancer services within the RCPs
- Greater engagement of the public and providers from across the full spectrum of cancer care in the development and evaluation of RCPs

- Institute regular reporting on the progress and performance of RCPs to all organizations participating in the program, the Cancer Care Ontario Board, and LHINs (as they are formed)

Figure 21: Regional cancer programs – annual activity cycle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- Greater engagement of the public and providers from across the full spectrum of cancer care in the development and evaluation of RCPs

Action Plan #5

Develop regional palliative care services in collaboration with the Ministry End-of-Life Provincial Advisory Committee

Description

Palliative care has been identified by most regions as a program in urgent need of development, and by Cancer Care Ontario as a board-endorsed priority. There are established national standards developed by the Canadian Hospice Palliative Care Association in relation to palliative and end-of-life care. As described in Action Plan #2, Cancer Care Ontario will use this information to develop specific standards for cancer palliative care. There is also a pressing need to address the co-ordination and delivery of services within the regions. Through this action plan, Cancer Care Ontario will participate in the broader planning that is occurring this year through the Ministry regional end-of-life strategy both at the provincial and regional levels.

Deliverables – Years one to three

- Cancer Care Ontario will be represented on the End-of-Life Provincial Advisory Committee
- Cancer Care Ontario will participate in regional network planning that is being facilitated by the District Health Councils (DHC). DHCs are designing the system for end-of-life care, and identifying responsibility for the co-ordination and integration of services at the system level, monitoring and assessment of community needs, and promotion of service innovations.
- Cancer Care Ontario will also provide input into the planning for more co-ordinated enhanced end-of-life service delivery within each Community Care Access Centres (CCAC) catchment area. CCACs have been asked by the Ministry to look at how to enhance home care and respite services, and avoid hospital admissions and caregiver burnout. The expectation is that services in the community will be client-centred, interdisciplinary and integrated – not only within the community, but also with other service sectors. Clients with cancer represent a significant proportion of the population that is currently receiving end-of-life services co-ordinated through the CCACs.

Outcomes

- A shift in the palliative care of cancer patients from the acute setting to appropriate alternate settings of individual preference
- Improved access to, and co-ordination and consistency of, comprehensive palliative care services and supports for cancer patients across Ontario
- Reduced wait times across the system by increasing bed availability for acute cases
- Improved quality care in the most appropriate setting

6. Priority 3
Closing the gap between demand and capacity

- There is a gap between the demand for cancer services and the capacity of the cancer system in Ontario
- Closing the demand/capacity gap requires action on two fronts:
  A. Reducing demand – Increase screening and prevention
  B. Increasing capacity to deliver services that will meet predicted demand, including capital investments, new funding approaches for cancer services and increase service volumes

A. Reduce demand

Reduce the demand for cancer services by lowering the risk of developing cancer and promoting early detection

- Increase volumes and reach of screening programs with focus on breast, colorectal and cervical cancers
- Target interventions to higher risk populations such as Aboriginal People

In developed countries, more than half of all cancers have the potential to be preventable. As described by the CQCO in *A Four-Point Strategy to Reduce Waiting Times in Ontario,* a key strategy for dealing with waiting times is to prevent some cancers and detect others at early stages.

In 2001, Cancer Care Ontario was asked by the Ministry to lead the development of a long-term plan for prevention and early detection of cancer in Ontario. In May 2003, Cancer Care Ontario and the Canadian Cancer Society released a significant report, *Cancer 2020*, a long-range action plan for cancer prevention and screening in Ontario.

Prevention focuses on minimizing and eliminating modifiable risks that can cause cancer. These risks include such things as tobacco use, poor diet, obesity, lack of physical activity, alcohol use, risky sexual activity, exposure to ultraviolet rays, exposure to occupational and environmental carcinogens (substances that cause cancer), and infectious processes.

Screening focuses on checking for disease in apparently healthy individuals, with no apparent symptoms. Current efforts focus on increasing participation in screening for breast and cervical cancer; development of a screening program for colorectal cancer; and potential screening for prostate and other cancers.

The *Cancer 2020* plan sets out measurable provincial targets for cancer prevention and early detection to be achieved by the year 2020. The targets and baseline data in Table 2 represent gaps, which need to be addressed by effective strategies.

The Government of Ontario has recently shown leadership in working towards these targets, particularly with respect to tobacco control. It is expected that legislation will be introduced in the Fall of 2004 to make all workplaces smoke-free.

Table 2: Cancer 2020 Risk Factor Target Measures

CANCER 2020 RISK FACTOR TARGET	MEASURE	MOST RECENT ESTIMATE	CANCER 2020 TARGET
TEEN SMOKING	Percent of teens who are current cigarette smokers	19%	2%
ADULT SMOKING	Percent of adults who are current cigarette smokers (ages 18 and older)	26%	5%
QUITTING SMOKING	Percent of daily smokers who will make at least one attempt to quit smoking per year	48%	90%
EXPOSURE TO SECOND-HAND SMOKE	Percent of Ontarians who will be exposed to second-hand smoke in the home and in private vehicles	18% (children) 25% (adults)	Less than 1%
SMOKE-FREE SPACE	Percent of public places (including bars, restaurants and gaming facilities) in Ontario that will be smoke-free	50% coverage in Ontario	100%
FRUIT & VEGETABLE INTAKE	Percent of Ontarians who consume five or more servings of vegetables and fruits daily	32% adults 44% children over 12 years old	90%
PHYSICAL ACTIVITY	Percent of Ontarians who participate in moderate to vigorous activity on most days of the week	34%	90%
OBESITY	Percent of Ontarians who are obese, as measured by a Body Mass Index over 30	Over 15%	10%
ALCOHOL CONSUMPTION	Percent of Ontarians who follow the low-risk drinking guidelines set out by the Centre for Addiction and Mental Health	94%	98%
SUN PROTECTION	Percent of Ontarians spending unprotected time in the summer sun between 11 a.m. and 4 p.m.	36% of Ontario adults avoid the sun during these hours	Reduce time in the sun by 75%

CANCER 2020 RISK FACTOR TARGET	MEASURE	MOST RECENT ESTIMATE	CANCER 2020 TARGET
TANNING EQUIPMENT	Percent of young adults using tanning equipment	16-30% once in the last ten years	**Reduce use by 75%**
SUNBURNS	Percent of Ontarians reporting a sunburn once in the summer	55%	**Reduce sunburns by 75%**
BREAST SCREENING	Percent of women aged 50 – 69 who participate in organized breast screening	62% for any screening 20% organized (Ontario Breast Screening Program)	**90%**
CERVICAL SCREENING	Percent of women who have ever been sexually active who participate in organized cervical screening	82% report a Pap test in the last three years	**95%**
HUMAN PAPILLOMA VIRUS VACCINATION	Percent of young women who are vaccinated for HPV before sexual activity begins	Vaccine not yet available	**95%**
COLORECTAL SCREENING	Percent of Ontarians who participate in an organized colorectal screening program	10% aged 50-74 report Fecal Occult Blood Test screening in the last two years	**90%**
OCCUPATIONAL SCREENING	Workplaces smoke-free from tobacco and other workplace contaminants		**100%**
OCCUPATIONAL SUN EXPOSURE	Outdoor workers demonstrating sun-protective safety behaviours		**Increase**
DRINKING WATER	Disinfection by-products		**Reduce**
AIR	Fine particulate matter ($PM_{2.5}$) average annual exposure		**Reduce 20% by 2010** **Reduce 30% by 2010**

Challenges

There are a number of challenges in realizing the potential from prevention and early detection of cancer:

- A major challenge for the prevention of cancer is one of implementation (i.e. action). There must be means to identify priorities for action, garner adequate resources, and develop systematic and sustainable strategies that will prevent avoidable cancer.
- There are many gaps in knowledge about prevention and screening. These gaps need to be addressed through research into preventable risk factors and their determinants, and effective prevention interventions at the population and individual level.
- There is also a need for rigorous evaluation of prevention and screening strategies and ongoing surveillance of cancers, risk and other relevant factors that impact prevention and early detection.

The primary prevention and early detection of cancer is further complicated by the following environmental factors:

- Knowledge exchange is complicated by the sheer number and range of stakeholders who must be reached
- Absence of uniform data requirements and collection across public health units
- Regional support/capacity building required (lack of health human resources, information resources, etc.)
- Lack of co-ordinated chronic disease prevention planning across disease entities to implement unified strategies to address common risk factors
- Chronic under-funding of prevention strategies, provincially and regionally
- Currently funded provincial screening programs in breast and cervical screening require enhancements and expansion in order to realize their potential to reduce cancer mortality
- Attention to new screening technologies that are emerging will require planning and implementation across the health care system

A broad population health approach

There is no single intervention that will reduce the prevalence of population risk factors and thereby reduce the cancer burden. Rather, multi-faceted approaches to prevention and screening – that are comprehensive, integrated and sustained – are more likely to lead to significant change. Ideally, the approaches should:

- Be directed to targeted populations
- Use a combination of interventions including public health policy, media and programmatic interventions

- Use multiple channels/locations or settings
- Build on existing efforts of public health, voluntary agencies, and Ontario-wide strategies
- Recognize the importance of social determinants of health as contributors to risk factors (i.e. income level, poverty, housing, etc.)

Tobacco control and heart health strategies have successfully used this approach. As well, integrated chronic disease prevention efforts in Canada are advocating for this approach[36].

There is a need to expand in the areas of developing and evaluating programs and policies. This entails research, surveillance and capacity building. Surveillance is important to monitor results at the population level and to identify emerging priorities. Ongoing and enhanced surveillance should cover risk factors/exposures, outcomes (such as cancer incidence) and policies directed to the whole population and special priority populations, such as Aboriginal people. It should include appraisal of the literature, stakeholders and databases for best practices, new and emerging risk factors, exposures and cancer and links or relationships between these. Investments required to enhance risk factor and screening information capture and reporting are included in Action Plan #21.

Effective, comprehensive strategies as described above will require strong provincial goals and strategies that can be implemented in a co-ordinated and consistent manner across all regions in Ontario. All regions of the province have prevention and screening networks to lead local implementation of prevention initiatives. Some regions have well-developed initiatives, which are candidates for the funds identified in this Plan while others are in earlier phases of planning.

Action Plan #6

Increase effort to ensure successful achievement of Cancer 2020 prevention targets

Description

Develop and implement an integrated action plan as developed by the provincial Cancer Prevention and Screening Council to ensure progress toward Cancer 2020 targets. Priorities include integrated chronic disease prevention, focusing on tobacco control, nutrition and healthy body weight and physical activity as well as a sustained agenda for reducing cancer risks among Ontario's Aboriginal population.

Deliverables – Years one to three

- Secure financial support to sustain regional prevention and screening networks that build capacity and implement regional prevention initiatives, monitored and guided by the ongoing work of the provincial prevention and screening council
- Plan and implement expanded comprehensive tobacco control strategy for Ontario, in keeping with the government's objectives
- Establish cancer prevention and screening knowledge exchange system involving relevant system stakeholders
- Support the implementation of a comprehensive nutrition strategy in Ontario, including the implementation of a nutrition media network and framework for provincial nutrition monitoring and surveillance system that is relevant to cancer and other chronic diseases
- Focus agenda for action on environmental carcinogens (including harmful exposure to ultraviolet radiation), involving partners such as the Ministry of Environment, Ministry of Natural Resources, non-governmental organizations, etc.
- Establish a routine cancer risk surveillance program with regular reports on Cancer 2020 indicators, incidence, mortality and strategies to collect up-to-date data for the Aboriginal population in Ontario (see Action Plan #21)
- Evaluate alternative methods for ongoing occupational cancer surveillance and recommend approaches to key stakeholders (see Action Plan #1)

Outcomes

- Measurable impact on cancer risk factors, leading to the achievement of the Cancer 2020 targets and the resulting reduction in cancer incidence and mortality

Action Plan #7

Increase screening activities in high impact areas of breast, cervix, and colorectal cancer, coordinated with the necessary diagnostic assessment activities

Description

Develop an overall provincial screening strategy, focused on expanding the existing breast screening program, cervical screening and introducing a colorectal cancer program, aimed at advancing the Cancer 2020 targets.

Deliverables – Years one to three

- Expand the Ontario Breast Screening Program (OBSP) to increase the participation rate of women
- Employ new service models proposed by the regions to increase breast screening rates
- Target efforts to increase participation in areas where rates are lower
- Incorporate all breast screening in Ontario in the target age group into the OBSP provincial program to ensure maximum effectiveness of breast screening in Ontario
- Develop colorectal screening program, incorporating recommendations from the Ontario Fecal Occult Blood Test (FOBT) pilot project by 2005/2006; secure funding for implementation in 2007/2008
- Complete HPV pilot project and recommend to the Ministry how to implement HPV testing in cervical screening by 2005/2006; implement HPV testing in Ontario within the context of an organized, evaluated program including educational support for physicians and women
- Produce evidence-based screening guidelines and provide advice on screening policy for key stakeholders, including government

Outcomes

- Measurable impact on cancer risk factors, leading to achieving the Cancer 2020 targets and the resulting reduction in breast, cervical and colorectal cancer incidence and mortality projected in the Cancer 2020 plan

Overview: Aboriginal Cancer Strategy

The Aboriginal population faces many unique challenges that must be considered when planning cancer services. Overall, between 1968-1975 and 1997-2001, the incidence rates for all types of cancer combined increased in both First Nations men and women. Incidence rates rose more rapidly in First Nations men and women than in Ontario as a whole[37].

Cancer is one of the four leading causes of death in the Aboriginal population. Cancer patterns differ significantly between the Aboriginal population and the general Ontario population. These patterns, including the increasing incidence of cancer, higher mortality rates, and the presentation of cases with advanced stages of cancer development, underscore the need for cancer control strategies in primary prevention, screening, diagnosis and treatment for Aboriginal peoples.

Action Plan #8

Implement components of the Aboriginal cancer strategy that will reduce preventable cancer rates

Description

Plan and implement key strategies to improve access to, and co-ordination of, cancer services to the Aboriginal population by:

- Developing culturally appropriate, evidence-based communication materials and health promotion strategies for prevention and screening
- Addressing data issues, including access for surveillance purposes, with key Aboriginal stakeholders in order to produce a comprehensive surveillance report on cancer and its risk factors among Aboriginal groups in Ontario
- Supporting regional program delivery by developing an Aboriginal navigator program, Aboriginal relationship training program for regional cancer providers, and training in prevention and screening interventions for Aboriginal health care providers

Deliverables – Years one to three

- Advance the Aboriginal Cancer Strategy among key Aboriginal and non-Aboriginal stakeholders, by completing an Aboriginal relationship training program for regional cancer program staff and continuing interaction with key Aboriginal stakeholders through the Joint Cancer Care Ontario Aboriginal Cancer Committee (JOACC)
- Produce regular surveillance reports on cancer and its risk factors among Aboriginal groups
- Implement an Aboriginal cancer control program in Northwestern Ontario that includes, health promotion, disease prevention and patient navigation resources
- Develop health promotion materials and strategies, engaging Aboriginal communities to address tobacco use (through the Aboriginal Tobacco Strategy) and best practices in prevention and screening for Aboriginal health workers

Outcomes

- Measurable impact on cancer risk reduction within the Aboriginal community; decreased cancer incidence and mortality, as well as greater satisfaction with cancer care

B. Increasing capacity to meet predicted demand

Increase the capacity to provide cancer services that meet projected demand by:

- Making strategic capital investments (Post-Construction Operating Plan funds, capital construction & equipment)
- Increasing volumes of cancer treatments to meet predicted demand
- Addressing growth projected for New Drug Funding Program
- Implementing new funding approaches

Increasing resources to provide cancer care is essential. As described earlier in the Plan, there is currently inadequate capacity for timely cancer care and the demand for cancer services will only increase. Without additional supply and capacity, Ontario's cancer system will not be able to keep up with the growth in new cancer cases.

As described by the CQCO in *A Four-Point Strategy to Reduce Waiting Times in Ontario*:

> *Without increased resources, the demand for services will exceed capacity, causing excessive waiting times regardless of the solutions implemented. In this situation, waiting lists will function as rationing systems, allowing only patients meeting certain criteria to receive treatment. Without additional capacity, any apparent improvement in waiting times may be indicative of under-utilization of cancer services rather than true improvement in system function. Therefore, it is essential that the capacity of the system be increased in addition to the other proposed solutions in order to ensure that access to services remains equitable across the province*[38].

This section more precisely describes the increase in the demand for cancer services and demonstrates the need for additional:

- Capital investments in facilities
- Operating costs associated with investments in facilities
- Capital investment in equipment

Facilities

The provincial government has taken steps towards introducing the necessary capital investments for cancer treatment facilities. However, it can take as long as 10 years from initial approvals to the opening of a new facility. To speed up the availability of needed resources, planning approvals for new cancer treatment facilities must be given priority.

Projects in construction but not yet completed include Hamilton, Sudbury, Grand River, Peel and Durham.

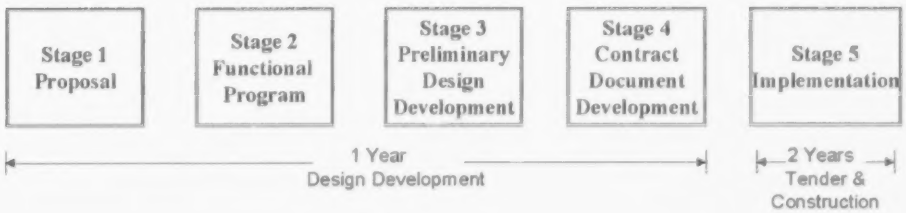
Projects previously announced by the Ministry but not yet completed design include:

- Niagara cancer centre HSRC directed in September 2001
- Algoma satellite radiation services May 1999
- Barrie cancer centre August 2003 (planning grant)
- Newmarket cancer centre August 2003 (planning grant)

Delays in project completion have resulted in a number of these facilities opening at or near capacity. These delays have meant that the next round of capital investment needs to occur immediately upon completion of the last round of investments.

The appropriate implementation of a cancer capital project should require one year for planning and two years for construction, delivering new or expanded capacity within three years, as outlined in Figure 22.

Figure 22: Ministry of Health and Long-Term Care capital planning process



Approach

Historically, capital investments in cancer treatment facilities have been driven by the need for radiation treatment services, which are delivered in cancer centres. It is recognized that there are capital needs associated with other cancer services, such as systemic therapy and surgery, which are delivered in over 100 hospitals in Ontario. This Plan does not address these needs. The Ontario Cancer Plan uses forecasted increases in the demand for radiation treatment to drive the projected needs for capital investments.

However, it must be noted that appropriate physical resources must be available to provide multi-disciplinary care in the cancer treatment facility and investments in treatment facilities must be tied to investments in human resources.

Funds received in the three-year planning horizon of this Plan would introduce new capacity up to 2010. Given implementation timelines associated with capital, it is important to consider needs in 2008, 2009 and 2010. Capacity requirements to 2014 are projected to inform decisions related to timing and scope of capital investments. Cancer Care Ontario will also be providing the Ministry with a detailed submission that will outline funding needs for the next five years.

Action Plan #9

Secure Post-Construction Operating Plan (PCOP) funding for eight centres under construction, or anticipated to open, to maximize results from capital investments

Description

PCOP funding is intended to cover:

1. Fixed infrastructure costs resulting from the addition of new space
2. Increased patient treatment volumes facilitated by the additional space
3. In-patient and diagnostic services for new or expanded oncology programs (not presented in the funding estimates provided in this Plan)

Operating cost projections are developed for the transition years before full operation based on anticipated activity levels. The purpose of these projections is to provide the government with the operating budget implications for implementing capital construction projects. Submissions are updated annually during the construction phase of the project with respect to expected service volumes and revised construction schedules. Receiving PCOP monies is critical to achieving the pre-defined outcomes approved by the Ministry in the functional programs associated with the capital project.

For a number of communities with construction projects completed or near completion, project implementation delays have made the need for these additional treatment services critical.

Peel

The new facility in Peel will be completed in May 2005. This facility is scheduled to operate three radiation treatment units upon opening with the potential to treat more than 1,100 radiation patients per annum. Occupancy planning cannot commence and the building will not open if PCOP funding is not confirmed.

Hamilton

The expansion in Hamilton adds three additional radiation treatment units to the centre. Many areas of the new facility, including the radiation treatment spaces, have been occupied as the construction of the expanded facilities continues. Without the PCOP funding, the added capacity created in constructing these new spaces will not be realized and wait lists in the region will continue to grow.

Sudbury

The Sudbury project is nearly completed and the new spaces are available to provide care to patients. However, to date the centre has not received the required operating funding to make use of the expanded facilities and provide care to the patients for which the facility was constructed.

Grand River

The new facility in Grand River has been open for one year. Without continued PCOP funding, the treatment programs initiated upon opening the facility cannot expand to treat the patient volumes the facility was planned to accommodate.

Durham

The Durham cancer centre currently operates an interim cancer centre and is scheduled to open in its new facility in 2007. Without continued PCOP funding the current programs cannot expand and the opening of the new facility is in jeopardy.

Ottawa, Kingston and North GTA

As investments in new facilities for these regions become operational in 2008, PCOP funding will be required to treat the additional volumes of patients for which these facilities will be constructed.

Expected outcomes

Receiving PCOP funding will provide the resources to operate new facilities, provide the capacity to treat projected patient volumes approved and planned for in the functional programs, and avoid re-referrals.

Table 3: Additional volumes as a result of PCOP funding

	2005/06	2006/07	2007/08	Total
Radiation Therapy				
Radiation New Cases	1,109	273	250	1,632
Radiation Treated Cases	954	243	225	1,422
Radiation Total Fractions	19,080	4,860	4,500	28,440
Systemic Treatment				
Systemic New Cases	882	460	301	1,643
Total Systemic Treated Cases (inc. orals)	900	469	307	1,676
Systemic Suite Visits	6,765	3,527	2,309	12,601

- PCOP funding in 2005/2006 will allow the system to operate:
  - An additional 10 radiation treatment units
  - Patient consultation and assessment space for radiation, systemic and surgical oncology
  - Systemic treatment units in four centres
- Funding in subsequent years of the PCOP will add additional capacity in the new treatment facilities. Some of these additions are dependent upon capital construction approvals.

Cancer Care Ontario will continue to work with its partner hospitals and the Ministry to update and develop PCOP submissions as required for approved capital projects. Modifications to the PCOP format to reflect funding models resulting from the multi-year funding initiatives will be incorporated. Regular updates to the PCOPs ensure that financial resources are invested in a manner that maximizes resource utilization. The timing of capital project implementation to receipt of PCOP funding provides the opportunity to better match demand with capacity. Better co-ordination between the PCOP funding flow and the capital project schedule would ensure new capacity is brought on efficiently and help in addressing wait times.

Action Plan #10

Fund new capital construction requirements in seven areas of the province

Description

Capital investments for construction are required immediately to build new or expanded treatment facilities to bring on required radiation treatment machines in 2008 through 2010 and to provide the facilities to accommodate capacity requirements projected to 2014. While this Plan budgets for three years, capital construction is one area where longer-term planning is necessary.

Projected facility requirements are based on radiation treatment service needs. Provincial planning standards have been used to estimate the required number of treatment units to address projected demand.

Provincial planning parameters for radiation treatment machines

Radiation demand parameters:

- The provincial target for the percentage of incident cases treated for the first time is 50%. This plan estimates that 47.5% of incident cancer will be treated for the first time by 2014 and that this rate will be reached gradually over the next decade
- 20% of patients will be retreated and this number remains constant over this planning horizon
- Treated cases will receive an average of 20 fractions (current level, the impact of changing technology and evolving treatment protocols on fractionation schemes will continue to be monitored for the impact on machine requirements)
- Provincial incidence projections distributed by county referral rates
- Radiation machine demand: total regional incidence times percentage treated

Radiation capacity parameters:

- Average operating hours per day: 10 hours (units operate between 8 and 12 hrs based on machine types and patient case mix)
- Machines operate: 235 days per year
- Fractions/patients per hour: 3.7
- Machine availability: 90%
- Machine capacity: each treatment machine operating an average of 10 hrs/day is capable of treating 391 patients

Regional distribution of long-term capital investments

Capital planning parameters mandate that facilities be planned to address projected demand for service for ten years. Based on the planning parameters for projecting radiation treatment machines and quantifying gaps in service based on regional referral rates, the following projects are recommended for implementation in this planning cycle:

Ottawa – 3 new machines

The region requires additional capacity by 2008. The facility at the Civic site is not capable of housing modern radiation treatment machines. An expansion is required to replace aging facilities and develop additional treatment capacity. A planning grant for this project is required immediately.

Kingston – 2 new support spaces

Kingston increased treatment capacity by adding two additional treatment rooms in 1993. The related support spaces were not constructed at the time due to hospital planning issues. The centre cannot address radiation and systemic demand in the current facility. A planning grant is required immediately to plan for redevelopment.

Newmarket & Barrie – 10 new machines

Planning for the construction of two three-machine centers one in Newmarket, the other in Barrie, was approved and is ongoing. By 2014 however a total of 10 machines will be required in this high growth area. Cancer Care Ontario recommends that in the final configuration there needs to be one six-machine facility and one four-machine facility, and that planning and construction assumptions should be adjusted accordingly.

Niagara – 3 new machines

The Hamilton centre currently serves the patients from the Niagara region. This region cannot address demand beyond 2008. Projections indicate that a new three-machine facility is required in the region. The Niagara region has the population to support a three-machine centre. The Health Services Restructuring Commission recommended the construction of this facility in 2001 with planning to be done in conjunction with the hospital redevelopment.

Sudbury/Algoma – 1 new machine

The concept of a satellite radiation treatment facility for Algoma was approved in 1999. The location of this facility must be reviewed with respect to implementation and investment requirements. Capacity for this region must be in place no later than 2009.

Peel – 2 new machines

A planning grant is required in this planning cycle for the construction of two additional radiation treatment rooms and related support space in the Peel region by 2014.

Projected future investments not funded in the context of this plan but required by 2010 include:

London – 1 additional machine

The London region will require an additional treatment machine by 2010. This machine increase may be achieved by full-time use of a machine that is currently being evaluated in a clinical trial (tomography radiotherapy unit). This requirement for additional capacity must be monitored over the next two years.

Windsor – new swing room

In 2009, plans for the construction of a swing bunker in Windsor must be initiated to create space to replace machines by 2010 without reducing current machine treatment capacity.

The province will have 81 radiation treatment units upon the completion of construction in Peel and Durham. With investments in the equipment discussed in Action Plan #11, an additional seven machines would be added to the system, raising the total number of machines in the system to 88.

The projected number of radiation machines deployed as a result of new construction is shown in Table 5 below. Projections indicate that by 2008 the province will require 92 treatment units to address demand. These additional four machines are required in Ottawa (two) and North of Toronto (two). By 2010 the demand for treatment machines will reach 98 units and by 2014 the demand will require 108 treatment machines.

Expected outcomes

- Facilities required to address the demand for treatment projected for the next decade
- Avoidance of re-referral, improvements in access and delivery of high quality care

A consolidated summary of capital investment outcomes related to Action Plan #10 is presented at the end of Action Plan #11 in Tables 4 and 5.

New and expanded facilities provide the capacity to treat patients and offer an improved environment for the delivery of care. The new technology that accompanies increased or enhanced facilities provides the opportunity to keep pace with new and emerging treatment practices. The ability to deliver evidence-based care depends on having the appropriate resources in place.

Action Plan #11

Capital investments in equipment (investment in radiation treatment machines)

Description

Radiation treatment requires the use of specialized equipment to plan and deliver care to cancer patients. The capacity to treat patients is directly related to the number and types of equipment found in the treatment setting. The types and complexity of this equipment continues to evolve at a rapid rate Standards must be maintained if patient throughput and quality of care issues are to be managed.

1. Fund new radiation machines

Fund machines for unequipped newly constructed radiation therapy space to meet projected volume demands and maximize capital investments in current construction.

- Purchase three machines for Peel by 2006
- Purchase one machine for Grand River in 2007
- Purchase three machines for Durham in 2008

Initial investments in equipment were projected based on anticipated treatment volumes upon opening. Future investments in equipment would be timed to accommodate the demand for services. For Grand River implementation is consistent with the Functional Program. For Peel and Durham, funds were not approved in the original capital allocations for these projects because initial project schedules anticipated that these facilities would be operational three to five years earlier than has occurred. Equipment funding must be coordinated to match the demand for service.

Impacts to site hospital, including in-patient and diagnostic services, were planned to support these facilities with the projected machine requirements realized: Peel at six machines, Grand River at five machines (6 if swing bunker occupied), and Durham at six machines. The regions served by these centres are currently under-served with radiation capacity; introduction of additional capacity will avoid increased wait times and re-referral to other jurisdictions for treatment.

Expected outcomes

Capacity added to address the demand requirements without major investments in construction. (The additional capacity realized from the installation and commissioning of seven additional units is 2,737 radiation treated cases per year.)

- Investment in equipment replacement and new technology acquisition

- Funding for equipment replacement and new technology acquisition should be increased, and mechanisms established to:
    - Increase the ongoing annual replacement funding to allow for replacement of all eligible equipment in the year it is scheduled for replacement. This funding will update the current provincial compliment of radiation equipment so that accepted standards of treatment delivery, such as Intensity Modulated Radiotherapy (IMRT), can be achieved.
    - Provide a funding mechanism for equipment purchases not eligible for funding from replacement grants but required for providing evidence-based care.

2. Increase replacement funding for radiation machines

The costs of machine replacement exceed the current replacement funding available. Deferrals from previous years have compounded the replacement funding shortfalls. The ten-year replacement schedule has been developed to illustrate the gap in funding required over the next three years.

The current funding mechanism to replace major capital equipment facilitates replacement of existing technology but does not accommodate the introduction of new and emerging technology. Radiation treatment technology is evolving rapidly and a mechanism is required to ensure that quality care can be maintained.

Evidence-based guidelines define the need for radiation therapy and for improved technology. Advances in imaging, computer technology, and engineering have revolutionized the planning and delivery of radiation therapy.

Precision radiation therapy to provide more radiation dosage to the cancer and less to normal tissues includes:

- Conformal radiation therapy, and intensity-modulated radiation therapy (IMRT)
- Brachytherapy and radiopharmaceuticals
- Image guided radiation therapy

In particular, deployment of IMRT on a more widespread scale will require continued upgrades to our existing linear accelerators, treatment planning systems, tumour localization devices and acquisition of new immobilization and radiation control devices, such as for respiratory gating (a new device that impacts on treatment precision).

Expected outcomes

The development of consistent standards for required radiation equipment across the system is ongoing and has identified that a number of centres are not equipped to an appropriate provincial standard. Increased funding for machine replacement will reduce regional disparities. Consistency in physical resources will allow for greater ability to achieve consistent activity levels and facilitate planning for new capacity. A network of treatment facilities will enable centres to introduce standard practice guidelines, as all providers will have the technology tools required to implement evidence-based care.

Continual renewal and expansion of radiation treatment capabilities carries clear benefits to patients and their families through improved access, decreased wait times and improved techniques that reduce side effects and/or improve tumour control. Downstream costs, such as treatment-related hospitalizations, can be reduced, which benefit the health care system as a whole.

Technological investments result in:

- Improved efficiency and increased patient throughput
- Improvements to the equipment, which have and will continue to reduce staff injury rates
- Increased potential for increased cure or decreased toxicity
- Improved precision, quality and safety

Table 4: Radiation caseload growth due to capital investment

	2005/06	2006/07	2007/08	2008/09	2009/10	2014/15	Total
Treated cases through investments in new capital construction (Action Plan #10)				1,564	2,346	3,910	7,820
Treated cases through investments in equipment (Action Plan #11)	1,173	391	1,173				2,737
Total growth in treated cases	1,173	391	1,173	1,564	2,346	3,910	10,557

Table 5: Radiation treatment machine deployment as capital investments are realized

	Current	Equipment Investments			Construction			Total
	2004/05	2005/06	2006/07	2007/08	2008/09	2010/11	2014/15	2014/15
Windsor	3							3
London[1]	8					1		9
Grand River	4		1					5
Hamilton	11							11
Ottawa	8				2		1	11
Kingston	5							5
Thunder Bay	2							2
Sudbury/Algoma	5					1		6
Toronto	29							29
Durham*	3			3				6
Peel*	3	3					2	8
Newmarket & Barrie					2	2	6	10
Niagara						2	1	3
Total Machines		**3**	**1**	**3**	**4**	**6**	**10**	
Total Machines in	**81**	**84**	**85**	**88**	**92**	**98**	**108**	**108**

*In construction

[1] Equipment exists minor revisions to room required

Action Plan #12

Increase operating dollars to support increased volumes of surgery, systemic and radiation treatment to meet predicted demand projections

Description

Approximately 80% of cancer patients have surgery, 50% have radiation therapy and 60% have systemic therapy. This action plan describes what is required for the service delivery system to keep up with the projected growth in cancer cases, not service shortfall (i.e., waiting times).

A note about the volume projections in this action plan:

- The projections are preliminary only and are available as provincial totals only at this time. There needs to be a thorough review of the regional and organizational level detail before proceeding with detailed operational planning and sign off of performance contracts for upcoming years.

- Accurate and comparable data on volumes of cancer treatment within Ontario is limited. For example, Cancer Care Ontario and Princess Margaret Hospital have defined radiation therapy activity in different ways for years. Systemic therapy activity data does not capture the complexity of treatments and there is almost no information except what can be derived from the New Drug Funding Program for activity outside of regional cancer centres and their affiliates. Gains have been made in defining and projecting cancer surgery volumes, but there are still a number of limitations. Enhancements of Cancer Care Ontario's data holdings to answer these critical questions are addressed in Action Plan #21.

- In the *GTA 2014 Cancer Report*, activity data from CCACs was presented for community based cancer services. Although this was an important data profile, more work needs to be done before accurate projections can be made for resource planning; hence, they are not included here.

Cancer surgery

Cancer Care Ontario has developed new methodology for service volumes and cost projections. Cancer services provided to cancer patients have been partitioned by phase of care (see Appendix D for detailed presentation of the methodology), and each phase has been aligned with either projected incidence, or mortality, or prevalence, as appropriate. Cancer Care Ontario prototyped the methodology with fiscal year 2001/2002 surgical activity, as reported in the Canadian Institute for Health Information's discharge abstract database.

Surgical volume projections over the next three years

The following tables illustrate the surgical volume projections. The anticipated overall demand for surgery increases by approximately 15% in total aggregate volumes over the next three years. The first table describes the volumes based on the four phases of care and the second table describes projections based on disease site.

In each of the tables, total volumes are provided for fiscal year 2001/2002 and fiscal year 2004/2005. In subsequent fiscal years (2005/2006, 2006/2007 and 2007/2008) the cumulative incremental increase over base year 2004/2005 is expressed.

a. Cancer surgery volumes by phase of care (volumes expressed in PACs 2001/2002)

Hospitals will need to provide approximately 17,000 new PACs weighted surgical cases over the next three fiscal years. Close to 50% of the increase will be driven by new incident cases of cancer requiring surgery within six months post-diagnosis (initial phases). Investigative procedures will account for approximately 12% of the increase in surgical volumes. In fiscal year 2004/2005, it is estimated that the number of terminal phase weighted cases will be marginally higher than continuing phase weighted cases. But in terms of growth over the next three fiscal years, we anticipate that the number of weighted cases to treat patients in the continuing phase will rise faster than the terminal phase. It is hypothesized that this is due to steady improvements in cancer survival as well as increasing incidence of new cases.

Table 6: Surgical volume projections by phase of care

	Total Volumes		Cumulative Marginal Annual Volume Increases Against FY 04/05 Baseline			
	2001/02	2004/05	2005/06	2006/07	2007/08	Total 2005-2008
Investigative	14,830	15,808	328	661	994	1,983
Initial	51,571	55,486	1,465	3,043	4,668	9,177
Continuing	16,406	18,058	578	1,189	1,825	3,592
Terminal	19,409	20,459	358	741	1,138	2,236
Total	**102,215**	**109,812**	**2,729**	**5,633**	**8,625**	**16,987**

b. Cancer surgery volumes by disease site (volumes expressed in PACs)

The following table (Table 7) highlights activity for cancer disease sites. These projections are based on estimates for the initial, continuing, and terminal phases of care – but not the investigative phase (investigative projections were based on changes in underlying population and were not parsed out according to suspected disease site). The increase in the demand for surgical services will be driven in large part by colorectal, prostate and other types of cancer combined. Regarding prostate cancer, it should be recognized that there is appreciable uncertainty in these projections, largely because of the rapid rise in cases seen in the 1990s, mostly attributable to the introduction of PSA screening. During the next decade, there may be either institutionalization of this test, or its disappearance, depending on the results of community-based trials of PSA screening. As another new year of cancer registrations are added to the Ontario Cancer Registry, it will be important to review these projections.

Separate plans to deal with surgical waiting time capture and reductions are being developed in conjunction with Ontario's Health Results Team. This plan, therefore reflects only increases in existing volumes based on incidence growth.

Table 7: Surgical volume projections by disease site

	Total Volumes		Cumulative Marginal Annual Volumes			
	2001/02	2004/05	2005/06	2006/07	2007/08	Total 2005-2008
Colorectum	20,772	22,564	570	1,204	1,799	3,574
Lung	8,317	8,589	120	243	386	750
Breast	7,622	8,279	196	379	589	1,164
Prostate	7,343	8,187	527	1,094	1,718	3,339
Other	43,330	46,384	989	2,051	3,139	6,179
Total	**87,385**	**94,004**	**2,401**	**4,973**	**7,631**	**15,005**

Systemic therapy

Systemic therapy is delivered in teaching hospitals and community hospitals. Integrated Cancer Programs (ICPs) manage systemic treatment within their facilities and through affiliated community programs. The activity at ICPs (excluding Peel, but including Durham) and PMH accounts for approximately two-thirds of all systemic treatment province-wide. The remaining treatments are provided at non-ICP hospitals.

Projection assumptions:

- Province-wide, the rates of intravenous chemotherapy per 1,000 adults vary between 2.5 and 3.0/1000 adults[39].
- Fifty per cent of incident cases should be treated with systemic therapy (*GTA 2014 Cancer Report, Section II*). This translates to a population-based rate of 2.5 – 2.6/1,000 adults. Based on this analysis, there is no gap provincially; however regional disparities may exist.
- Given continuing increases in population, an increase in the number of people over the age of 65 and the related incidence, the system will experience a 3% annual increase in demand for service.
- Table 8 illustrates the numbers of incremental new systemic cases to be seen at ICPs over the next three years. These projections are based on 3% annual growth over 2003/2004 activity levels.
- Additional funding is required to support the chemotherapy program in Grey Bruce County to sustain the outpatient chemotherapy program serving the residents of that area.

Table 8: Projected incremental systemic new cases

	2005/06	2006/07	2007/08	Total
New Systemic Cases				
ICP & PMH New Volume Funding	800	625	640	2,065
Other Hospitals New Volume Funding	300	310	325	935
Total New Systemic Cases	1,100	935	965	3,000

Radiation treatment

Based on an assessment of service needs and capacity, there continues to be a gap. Capacity versus demand projections indicates that demand across most regions in the province has not been addressed. A detailed review of parameters used to plan for future radiation services was presented in the capital capacity section of the Plan.

In an effort to match capacity to demand, cancer centres operate their equipment beyond the standard planning parameters. These efficiencies have resulted in additional capacity without investments in additional capital resources, but remain dependent upon human resource availability and appropriate operating funding.

After hours operation for radiation treatment for patients from Durham Region at Toronto-Sunnybrook also contributes to incremental volumes. This service will reach maximum capacity at 2005/2006. In 2007/2008 when Durham Regional Cancer Centre opens, the capacity at Toronto-Sunnybrook after hours clinic becomes available. Table 9 shows the projected incremental radiation new cases for the next three years.

Table 9 – Projected incremental radiation new cases

New Radiation Cases		2005/06	2006/07	2007/08	Total
	ICP & PMH New Volume Funding	1,300	1,000	1,000	3,300

Action Plan #13

Implement a new approach to funding new and expensive anti-cancer drugs

Address growth projected for the New Drug Funding Program

In 1997 the Government of Ontario recognized the need to fund expensive intravenous anti-cancer agents according to evidence-based practice guidelines through a centralized mechanism. This approach ensures uniform access and quality of care close to home. Cancer Care Ontario was charged with the establishment and administration of an evidence-based program of drug reimbursement with two important elements:

1. Knowledge synthesis and evidence-based recommendations

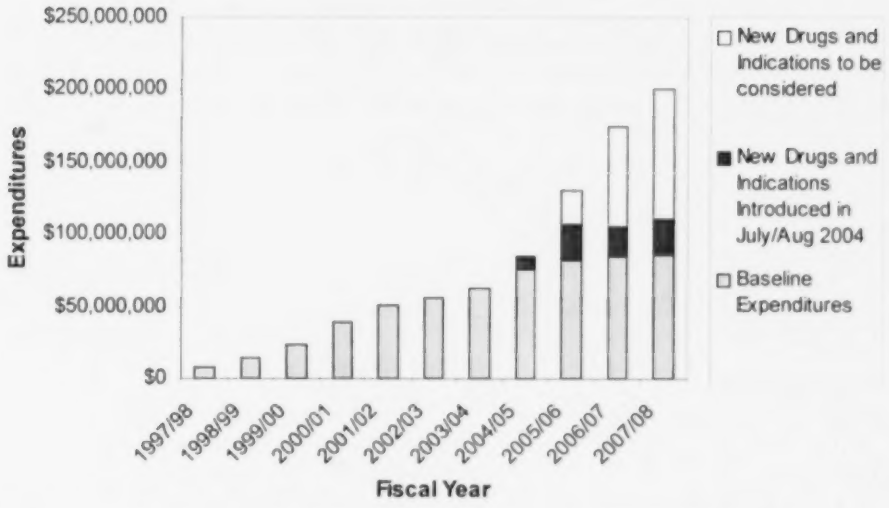
2. Central review of all reimbursement claims against established use criteria

The New Drug Funding Program (NDFP) infrastructure validates and tracks more than 90,000 reimbursement requests for over 14,000 patients annually at a cost of $62.4-million (2003/2004).

Systemic therapy has grown in scope since its inception, with the discovery of newer agents and new indications for treatment. For instance, as recently as five years ago, chemotherapy for lung cancer, one of society's greatest killers, was not routinely prescribed due to toxicity and relative lack of efficacy. Clinical research and the identification of new and effective agents have provided more effective treatment for these patients resulting in increased service demands. Similarly, the advent of adjuvant chemotherapy for colorectal cancer and the development of effective drugs for use as second- and third-line palliative therapy for common malignancies have created a huge demand for systemic therapy. The rapid development of these new agents has made it difficult to estimate increases in demand for systemic therapy. The number of new patients has increased by 24% over the last four years; the number of patients requiring intravenous chemotherapy has increased by 41% and the total number of treatment visits increased by 54%.

The NDFP has assumed the cost of reimbursement for almost all new intravenous agents in the province since its inception in 1997 and has experienced significant growth. The program has grown from reimbursing the treatment of 2,354 patients for 6 drugs and 8 indications at a cost of $8-million in 1997/1998 to reimbursing the treatment of 14,212 patients for 16 drugs and 31 indications at a cost of $62.4-million in 2003/2004. Across Ontario, 92 hospitals currently participate in the program. With new agents and drug indications expected to be approved in Canada within the next two years, annual expenditures for this program are expected to increase from the current level of $82 to $85-million, to approximately $130-million in 2005/2006, $175-million in 2006/2007, and $200-million in 2007/2008 (see Figure 23). It is also anticipated that costs for new drugs launched in the Canadian market will progressively increase. As patents expire for some drugs within the NDFP, lower priced generics may become available during this time.

Figure 23: Projected growth in NDFP expenditures



Oral anti-cancer drugs are funded by the Ontario Drug Benefits Program (ODB), third-party payers and by patients themselves. The total cost of oral agents is approximately twice that of intravenous drugs covered by NDFP. The criteria for reimbursement of oral agents are established by the ODB independent of the NDFP, though both publicly funded programs are informed by consultations with cancer doctors. The ODB's drug approval process also requires a submission from the manufacturer containing both clinical and pharmacoeconomic evidence, and formulary decisions may or may not be informed by a PEBC practice guideline. The NDFP process relies entirely on the practice guidelines submitted by the disease group and does not consider pharmacoeconomics. The two processes provide the potential for inconsistent policy decision making related to drug listings and patient access issues. It would be logical to harmonize the two cancer drug approval processes and adopt the best of both approaches. Considering both oral and intravenous agents, Cancer Care Ontario expects that the total cost of anti-cancer agents used in Ontario will reach $525-million by the 2006/2007 fiscal year due to the introduction of expensive new agents and an increased demand by an aging population. Considering this anticipated growth, a unified and formalized process is required to drug listing decision making and to ensure that funding matches policy decisions.

Expected outcomes

Over the next year, Cancer Care Ontario proposes to manage the pressures in the NDFP by:

- Changing the approach to the listing of new cancer drugs on NDFP, based on the Ministry-supported plan
- Establishing a formalized and predictable process for Ministry funding for NDFP separate from the rest of the Cancer Care Ontario budget

- Streamlining ODB and NDFP formulary decisions to support appropriate access to treatments of proven value
- Using pharmacoeconomic analysis to inform intravenous anti-cancer drug formulary decisions
- Developing a strategy to optimize cancer drug pricing in Ontario

Action Plan #14

Implement new approaches to funding cancer services by: a) developing and testing new rate-complexity-volume funding methodologies for cancer services in Ontario and b) developing alternate funding plans (AFPs) as required

Description

Growing demand and limited resources require tough choices. The challenge of how to allocate limited resources towards competing needs of the population will only grow. Solutions need to be developed to maximize patient outcomes while simultaneously minimizing costs. And in support, new approaches are required to equitably compensate healthcare providers to meet the anticipated onslaught of demand. This requires an understanding of:

- The anticipated demand for services to meet the underlying changes in Ontario's demographics
- The volumes and types of services required to meet the demand
- The configuration of various services alternatives and their associated cost
- A fair and equitable rate structure to compensate providers that acknowledges the variability in the complexity of services delivered

a. Multi-Year Funding

Cancer Care Ontario embarked on a project jointly with the Ministry to develop volumes projections and rate methodologies for cancer services funding. The initial scope of the project was limited to hospital activity – primarily surgery, outpatient radiation oncology and systemic therapy. The intent of the work is not only to support some of the initiatives identified in the provincial plan but also to support the ICP agreements and multi-year funding accountability performance agreements that the Ministry is currently introducing to hospitals:

- The Cancer Program Integration and the PMH agreements with Cancer Care Ontario contractually specify a commitment to work together on the development of new funding methods for cancer services.
- The Ministry made a commitment in February 2003 to work with Cancer Care Ontario and its partners on the development of new approaches to funding cancer services. In February 2004, the Ministry established a cancer service multi-year funding work group with clear terms of reference and deliverables. It is anticipated that the overall multi-year funding agreements that the Ministry will sign with the hospitals will have a schedule for cancer services (among other types of services, e.g., cardiac) to which hospitals will commit.

There are three phases to the funding initiative.

- Phase I – The intent of phase I is to develop our basic metrics to measure and project activity, volumes and costs. It includes the development of new activity case mix methodologies that address complexity for radiation and systemic therapy and enhance the current case mix methodology for cancer surgery patients. Develop a new volumes projections methodology that can be applied to radiation, systemic therapy and surgery activity. Create new rates for radiation, systemic therapy and surgery volumes. Currently, the case mix methodologies for both systemic therapy and radiation oncology are in development.
- Phase II – Improve and validate new rates and volume projections as part of the development of the Ontario Cancer Plan. Through this process, we tested our volume projection methodology on surgery.
- Phase III – Test new rates and volumes for 2005/2006 ICP funding agreements. Additionally, the outputs of the funding initiative will be refined to support a number of other initiatives including the surgical waiting list initiative, Quality Council reporting, cancer activity definition schedules to be included in the Ministry hospital accountability and performance agreements with hospitals – formal implementation in 2006/2007 hospital cancer activity schedules (if the Ministry accountability agreements proceed as planned).
- MYF agreements for cancer services need to be implemented by 2007

b. Alternate Funding Plans (AFPs)

Within the health system there is a strong link between compensation and human behaviour. This has been recognized by the Ministry and the Ontario Medical Association in their 2000 agreement which set aside funds to compensate physicians practicing in academic health science centres in innovative ways to allow them to fulfill their patient service and academic responsibilities. Within the cancer system, alternate funding plans (AFPs) are currently in place for two specialists groups, medical and radiation oncologists, and planned for surgical oncologists. The Ministry's stated goals for AFPs are to:

- Better coordinate and integrate the interests of medical staff, teaching hospitals and universities
- Improve recruitment and retention of academic physicians through appropriate recognition and remuneration of their work in all areas, including education, clinical service and research
- Enhance predictability around physician funding, service volumes, research and education, thereby improving accountability

Knowing this, Cancer Care Ontario supports these goals and plans to work with the physicians, the relevant hospitals, the relevant universities, the Ontario Medical Association, and the Ministry to achieve greater alignment of compensation of academic specialists with cancer system goals and cancer service planning.

Expected Outcomes

In 2004/2005, Cancer Care Ontario will:

- Complete Phase I – common definition of radiation courses and systemic therapy suite visits among ICPs and Princess Margaret and develop a common case mix methodology that acknowledges differences in complexity of patients
- Establish common definitions for activity, cost metrics and forecasting methodologies for surgery, radiation and systemic therapy
- Develop rates methodology to support surgery waiting lists
- as AFP agreements are being re-negotiated, Cancer Care Ontario will articulate a clearer set of objectives (tied to the system goals), with defined quality metrics that emphasize performance and accountability and will participate in AFP discussions and negotiations as required

In 2005/2006, Cancer Care Ontario will:

- Implement the funding clause within the ICP agreements and the Ministry operating plan cancer schedules to support MYF for all hospitals with integrated cancer programs. Over the longer term, Cancer Care Ontario is proposing to steer incremental funding to drive improved quality (see Action Plan #4). Provide schedule of cancer services for the Ministry accountability performance agreements with hospitals.
- Test the phase I results to support planning of services and capital requirements for radiation and systemic therapy for the ICP hospitals
- Support reporting to the Cancer Quality Council of Ontario
- Continue to participate in AFP discussions and negotiations as required to align cancer system goals and AFP arrrangements

7. Priority 4
Rapid access strategies

- Innovation is essential to transform the cancer system and meet the anticipated demand for access, service delivery and quality
- Four key areas of innovation that will enhance system outcomes are:
  - Rapid access diagnostic units
  - New health human resource models
  - Process improvements
  - New technologies
- A cancer waiting times strategy will be developed, first for surgery with additional modalities to follow

Access to cancer services in Ontario has declined over the past decade. Serious delays for radiation therapy and other cancer services are far too common. The Government of Ontario is taking action on wait times for cancer services through the recently appointed Health Results Team. Cancer Care Ontario is preparing a detailed proposal to address cancer wait times for Ministry consideration. Cancer Care Ontario's proposed approach is outlined in Action Plan #15.

The Ontario Cancer Plan includes a number of innovative proposals to improve access to cancer services. These proposals are in keeping with the *CQCO Four-Point Strategy to Reduce Waiting Times* that recommended that Ontario take a national leadership role in dealing with wait times by developing and testing innovative practices that may find broader use in the health sector. It recommended that Ontario implement:

1. Diagnostic assessment units and rapid access models for improved access to appropriate diagnostic services
2. Expanded roles and skill mix required for health care professionals to increase system capacity
3. Process improvement and innovation throughout the cancer system
4. Innovative new technologies to improve the patient journey

Some of these proposals are ideal candidates for the $5-million fund for innovative solutions to address waiting times in the cancer system announced in the May 2004 Ontario budget.

1. Rapid access diagnostic units

- Several reports on waiting times for diagnostic services describe a growing problem of access to diagnostic imaging. A recent Institute for Clinical Evaluative Sciences (ICES) report[40] found that waiting times for diagnostic imaging ranged from as short as 48 hours to as long as two weeks for cancer and other urgent indications. The Ontario Association of Radiologists also compiled data on waiting times for CT and MRI and reported that 90%[41] of Ontario patients wait longer than medically optimal for the services that are commonly used for cancer diagnosis.

- There is evidence of inefficiency and inappropriate use of diagnostic imaging in Ontario, such as duplicated procedures or the use of multiple imaging tests because the most appropriate test was not ordered initially. A reorganization of entry into the cancer system and diagnostic processes could reduce duplicate tests, improve efficiency and impact waiting times throughout the cancer system. Although there is enough evidence to suggest that rapid access diagnostic units (RADUs) can reduce waiting for diagnosis, they have not been evaluated in Canada or elsewhere.

- Reducing the wait time between cancer diagnosis and treatment through diagnostic assessment units is an innovation that would provide a single point of access. Rapid access diagnostic units could lead to improved quality and efficient care by concentrating diagnostic services, multi-disciplinary consultative expertise, patient information resources and psychosocial supports[42].

- The U.K. is implementing rapid access diagnostic centres as part of a national plan and has been able to reduce waiting times by combining all diagnostic investigations into one hospital appointment. For example, in the Dorset Cancer Network, the implementation of a one-stop hematuria clinic reduced waiting times from as much as 16 weeks down to two weeks by integrating tests into one appointment[43]. Diagnostic interventions completed in one appointment include ultrasound, cytoscopy and specialist consultation. A systematic review of the literature suggests that RADUs lead to positive outcomes, such as reduced wait times for diagnostic services and greater satisfaction for patients with benign conditions[44].

- The Cancer Plan recommends that those proposals being reviewed by the Ministry be assigned priority for funding – namely, Ottawa and Sudbury. Other proposals would be advanced once funding for these programs is secured and the Ottawa project is evaluated.

2. Innovative use of health human resources

- Ontario is facing health human resource shortages in a number of areas, including endoscopy for colorectal screening, pathologists for diagnosis and anaesthesiologists for surgery. For example, Ontario has only 360 of a needed 500 pathologists[45]. Significant proportions of medical oncologists will reach the age of 65 in the next ten years[46]. Part of the human resource solution is to create new non-traditional roles for health care professionals. Although there is a need to recruit and train additional personnel in key areas, the delegation of some functions and the development of new skills and roles may address some of the capacity issues.

- There is anecdotal evidence that innovative role expansion has been effective in increasing system capacity in the United Kingdom. Using nurses to provide services traditionally performed by radiologists, physicians or other health care team members has shortened waiting times in many cancer networks. The use of pathology assistants is intended to free-up pathologists' time, while

taking advantage of the large number of foreign-trained physicians in the province that cannot be licensed to practice.

- Another example is provided by the Kaiser Permanente Medical Care Program of Northern California[47]. This health maintenance organization confronted the systemic barriers to increasing the population screened for colorectal cancer with flexible sigmoidoscopy by having the procedure performed by nurse endoscopists. The program includes an independent learning module for nurse endoscopists and an evaluation model of nurse performance. The program has resulted in >80% screen rate of the target population and there has been a high job satisfaction rate among the nurses involved. While there are some important issues to be dealt with in the transferability of the nurse endoscopist model to Ontario, it provides an inspirational lesson in the successful application of innovative solutions to health human resource shortfalls.

- In Ontario, a research study on the use of advanced practice nurses focused on pain and symptom management in five cancer programs in Ontario and provides data on their value to the system and future role implementation in other areas[48].

3. Improve processes and encourage innovation

- Ontario has experience in documenting how process improvements can yield significant gains in the efficiency of the cancer system. The Canadian Radiation Oncology Services (CROS) experience in Ontario demonstrates that efficiency improvements can be achieved by implementing process changes[49]. CROS was a private delivery initiative implemented in a single setting that redesigned the radiation therapy delivery system processes for breast and prostate cancers through changes in staff organization, incentives and clinic logistics, in order to make significant efficiency gains. The changes resulted in a 60% improvement in efficiency compared to elsewhere in Ontario. Although the CROS model of radiation therapy delivery would have to be revised for implementation in a full-service publicly funded radiation therapy centre, the model nonetheless demonstrated the potential of process improvement to increase efficiency where there is limited capacity in the cancer care system.

- The NHS in the UK has made significant gains in reducing waiting times by mapping the patient journey and implementing process improvements, guided by the expertise of clinical process engineers. The Cancer Services Collaborative, established in September 1999, initiated 51 projects in nine local cancer networks. The models tested in the local networks were then implemented in the remaining cancer networks, yielding significant reductions in waiting times across the country. In the Mid-Trent Cancer Network, mapping the patient journey through the nuclear medicine department and identifying bottlenecks led the clinic to develop multi-disciplinary team meetings, improving the referral process and reducing waiting times for bone scans from a median of 56 to 24 days[50]. In the Trent Cancer Network, long waiting times for trans-rectal ultrasound and biopsy procedures in the urology department prompted a redesign of services. The patient journey was mapped through the use of an electronic diary that tracked patients through the system. Based on the results obtained, the system was redesigned to include an improved booking system, pre-booked follow-up appointments and a redesigned patient information leaflet. These changes are reported to have reduced waits from 52 to 4 weeks[51].

4. Innovative new technologies

- The journey across the continuum of cancer care is a complex and often confusing experience for patients and their family members. Individuals require multiple contacts within the system as they travel from diagnostic services, through the various stages of treatment and follow-up care. Managing the multiple appointments and frequent testing can be daunting. Throughout their journey, patients are in contact with many different providers of care, in the hospital, ambulatory treatment facilities and the community. Information for cancer patients is not consistent, timely, accessible, or easy to interpret.

- A patient portal is one tool used to promote communication between the patient and healthcare providers and help patients navigate their way through this complex system. Used in the United States, and in Canada on a more limited basis, it can deliver information and provide interactive messaging to cancer patients while providing an opportunity to promote communication between the patient and health care provider

- Tele-technologies can help redress human resource shortages in communities. Tele- and video technologies are already well used to support cancer consultations and treatment in rural and remote communities. These technologies could be expanded to address acute shortages of certain skills in communities across Ontario. One example is the development of a telepathology program, linking community hospitals to a centralized pathology resource.

Action Plan #15

Understand, monitor and reduce waiting times

Description

Building on the other access-focused actions noted in this Plan, Cancer Care Ontario will implement an integrated, cohesive and effective approach to wait times across the Cancer Care Ontario mandate including:

- Establishing data standards to describe and report on waiting
- Gathering data and reporting on wait times
- Working with the Health Results Team and Ontario's e-health office to identify and implement a province-wide information technology plan to support wait times reporting
- Advising on funds required, and allocation of those funds, to reduce wait times

Deliverables – Year one to three

- Develop strategies to collect data and report on surgical wait times in a manner that will have the greatest improvement effect and will support accountability to the public on wait time reduction activities
- Develop tools for the Results Team to determine appropriate and effective activities and tools to reduce wait times

Outcomes

- Standardized approach to understanding surgical wait times, definitions and targets
- Decreased wait times for priority services
- Continuous reporting & improvement process for wait times
- Enhance decision tools to manage access to surgical services

Action Plan #16

Optimize access and point of diagnosis, by implementing, funding and evaluating two rapid access diagnostic units in Ottawa and Sudbury

Description

Cancer Care Ontario will fund and implement two rapid access diagnostic units (RADUs) and evaluate results based on an assessment of the quality of care provided, and linkages with outside healthcare providers and regional partners.

Deliverables – Years one to three

Over the next three years Cancer Care Ontario is proposing to secure operating funds for the two rapid access diagnostic units and evaluate results. The evaluation will include an assessment of the quality of care provided and linkages with external healthcare providers (e.g., family physicians) and regional partners. Methods that are planned to measure performance and evaluate the strategy include:

- Measurement of diagnostic test utilization
- Clinical outcomes
- Wait times from referral to definitive diagnosis and to treatment
- Satisfaction survey of patient, for referring physicians and organizations

Outcomes

- Measurable reduction in wait times for diagnostic services
- Reduced cost of diagnostic assessment
- Greater satisfaction for patients with both cancerous and benign conditions

Action Plan #17

Implement innovative health human resources, such as nurse endoscopists and oncology nurse practitioner projects

Description

Cancer Care Ontario will implement innovative health human resources, including oncology nurse practitioners, advance practice radiation therapists, and nurse endoscopists for flexible sigmoidoscopy to screen for colorectal cancer.

Deliverables – Years one to three

- Cancer Care Ontario is recommending innovation proposals related to human resource, process improvement and new technologies based on the potential to:
  - Reduce wait times
  - Transfer learning to other regions and parts of the health sector
  - Optimize use of existing resources, demonstrate value for money and yield visible results in the three-year timeframe of the Plan
- The Ontario Cancer Plan recommends implementing innovative health human resources identified in the regional cancer plans:
  - Implement oncology nurse practitioners to undertake well patient follow-up and to achieve regional prevention targets
  - Implement advanced practice nurses for specific patient populations
  - Implement an advance practice radiation therapist pilot (funded in 2004 by the Ministry) and evaluate effectiveness
  - Pilot screening for colorectal cancer using non-physicians trained in flexible sigmoidoscopy
- Cancer Care Ontario will:
  - Support implementation of expanded roles across the cancer system, by negotiating with regulatory bodies to expand scope of practice, and collaborating with academic settings for curriculum design and implementation
  - Work with the Ministry on cancer human resource strategies, with dedicated funding to support innovative models
  - Work with the Ministry and the Ministry of Colleges and Universities to address human resource needs of the cancer system

- Optimize the use of scarce human resources by creating innovative non-traditional roles
- Support the evaluation of outcomes associated with these projects

Deliverables – Years two and three

- Evaluate health human resource projects based on:
  - The level of uptake of new roles in the cancer system
  - The effects on waiting times in comparison to current situations
  - Patient satisfaction data that reveals the 'before and after' effects of waiting time reductions and navigation implementation
  - The volume of patient throughput in the system in relation to projections and performance expectations
  - Outcomes for specific patient populations

Outcomes

- Increased colorectal screening for the population over the age of 50 years in the next five years through nurse endoscopists
- Decreased waiting times for systemic therapy using advanced practice nurses for breast, lung, gastro-intestinal (GI) disease sites
- Decreased waiting times for breast and prostate cancer patients in radiation therapy by use of advanced radiation therapists

Action Plan #18

Fund high-impact process improvement projects that increase throughput across the cancer system

Description

Cancer Care Ontario will fund specific initiatives developed by the regions to maximize alternate service delivery models in hospital, community and home settings, and use ambulatory settings to facilitate discharge and provide alternatives to hospitalization. These initiatives involve relatively small investments to co-ordinate access to diagnostics and other cancer services, program innovations in colorectal cancer screening, storefront clinics and pilots for wound management and a new model of oncology rehabilitation.

Deliverables – Years one to three

Virtual clinic & modular wait list system in Kingston

- Invest in virtual clinic and modular wait list system in Kingston focused on breast cancer
    - This project enhances patient co-ordination and uses web-based technology to track and monitor patients waiting for treatment procedures and other services; it builds on the success of the lung cancer clinic pilot

Rapid access diagnostic assessment clinics for lung and skin cancers in Kitchener

- Establish rapid access diagnostic assessment units for lung and skin cancer
- Appoint a dedicated patient co-ordinator to function as the key contact for the patient; to refer patients to physicians, pathologists, radiologists and other consultants, and manage the process from initial referral through to and including follow-up

Co-ordinated and organized access to cancer diagnostics in Windsor

- Create common priority site-specific requisition forms for imaging and consultation; co-ordinate access to imaging and specialist for tissue diagnosis, staging procedures prior to planning therapy; use evidence-based diagnostic guidelines

Wait time reduction for radiation therapy in Windsor

- Focus on process improvement from consultation to treatment phase. Initiative will set treatment date at the beginning of the booking process. Anticipates altering physician schedules, redesign and adherence to a patient booking process, innovation in deploying RT therapy resources and investments in computer software

Colorectal screening initiative in Toronto

- Conduct needs assessment: evaluate colorectal cancer capacity for large bowel endoscopy in the city, referral patterns for fecal occult blood testing, flexible sigmoidoscopy, and colonoscopy
- Evaluate different ways of organizing screening services and alternative providers of flexible sigmoidoscopy and their future role in the system
- Implement non-physician flexible sigmoidoscopy program, linking to the Toronto GI network
- Develop IT infrastructure, including systems and data elements to appropriately manage colorectal cancer patients and monitor quality
    - Evaluative studies of quality and outcomes
    - Design methods to promote programs for the promotion of colorectal screening

Storefront clinic for cancer patients in Toronto

- Test model and provide services such as wound care, blood count checks, education, line flushing, IM injections and access to social, personal and support services outside traditional hospital/clinic environment
- Develop protocol to identify types of in-patients appropriate for transfer; standardize treatment protocols and services; develop a referral and case management system
- This initiative focuses on ongoing management of both ambulatory and in-patients. The initiative will test the ability to provide similar, if not better, quality care closer to home.

Outcomes

- Reduced wait times
- Increased service availability in more accessible locations for patients. Improved links between acute and community care settings
- Increased opportunities in knowledge transfer of tested new models of care delivery to other regions and parts of the health sector
- Optimized use of existing resources, demonstrate value for money, and yield visible results in the three-year timeframe of the plan

Action Plan #19

Implement innovative new technologies to promote access

Description

Cancer Care Ontario will fund proven and innovative new technologies, such as expanding the patient portal initiative, and conducting various process reengineering initiatives to reduce wait time for expert pathology reports.

Deliverables – Years one to three

MY CARE Source Patient Portal

- Expand the capability of the Patient Portal *My CARE Source* developed in Kitchener at the Grand River Cancer Centre to:
    - Improve access to laboratory results
    - Communicate with and educate patients undergoing treatment in community clinics
    - Track appointments for patients undergoing diagnostic assessment
    - Access the patient record electronically
    - Interface with the pharmacy system for prescription renewals

Telepathology Project

- Develop telepathology program that links community hospitals to a centralized expert pathology resource

Outcomes

- Improved patient access to information related to an individual's treatment plan
- Optimized use of resources. For Patient Portal *MY CARE SOURCE*: reduce calls to providers for appointment clarification, to clinical staff for results sharing. For telepathology project: allow for more effective use of scarce pathologists and address shortages of pathologists in selected locations
- Improved evidence-based decision making by providing best practice information shared in common patient-friendly format

8. Priority 5
Invest in performance measurement and accountability

- System planning relies on access to standardized, reliable and timely data on costing, volumes, incidence, prevalence, service provision and quality of care
- High quality and broad scope of data provided in usable format, inform performance accountability, and is required to achieve each of the initiatives in this Plan
- Performance measurement and management is a core discipline for the cancer system
- Cancer Care Ontario holds a large portfolio of population data bases, survey data bases and a well established cancer registry

Ontario's cancer system is characterized by many different organizations that oversee pieces of the system. Cancer Care Ontario is working with its partners to move toward an integrated, high quality and responsive cancer system for Ontarians. Performance measurement and accountability are built on availability of timely, accurate information. In recognition of this need, Cancer Care Ontario has developed and is implementing an information management strategy for cancer services that is designed to ensure that all providers in the cancer system participate in creating, sharing and using the full suite of information required to improve cancer care.

Full accountability requires monitoring, evaluating, and reporting on the use of provincial standards. This will enable Cancer Care Ontario to evaluate the performance of various entities within the cancer system, to provide and/or advise on tools to implement (or adjust) improvement efforts that address key issues such as quality and access to care, and to monitor the effect of these efforts over time.

To facilitate planning, manage cancer services and forecast needs, the cancer system must have rapid access to a wide range of data, including: incidence, prevalence, survival and mortality for each type of cancer at each stage, such as:

- Information about cancer risk factors affecting incidence
- Volume of cancer screening and care activities
- Descriptors of service provision to assess adherence to standards and guidelines
- Demand/growth projections for cancer screening and care
- Distribution of activities across organizations and institutions

- Utilization rates by region
- Access to cancer care such as waiting lists
- Information about current treatment capacity
- Staging information and optimal treatment protocols for cancer site and stage of disease
- Information about outcomes

To calculate payment rates for cancer care, Cancer Care Ontario must:

- Determine how cost is to be defined, by collecting information on expenditures routinely or conducting periodic expenditure analyses
- Consider capital requirements and overhead costs and how they will be handled
- Establish yearly base volumes for each institution and identify what incremental funding may be required to achieve additional volumes

What information we have

Cancer Care Ontario holds a large suite of population databases, survey databases, a well-established cancer registry, research data files and raw data in charts. These are all-important tools that can help assess and forecast a range of cancer service activities. It is important that Ontario takes advantage of and builds on these data sources to support improvement of the quality of cancer services. More specifically, Cancer Care Ontario holds:

- A population-based cancer registry that records information about all Ontario residents who have been diagnosed or who have died of cancer (the Ontario Cancer Registry)
- An activity level database that describes in detail the care provided within the integrated cancer programs
- Access to the Canadian Institute for Health Information databases that describe in-patient and out-patient, hospital-based care
- Numerous other more service or research-focused datasets

Despite these considerable strengths, Cancer Care Ontario has significant gaps in its understanding of cancer service delivery and outcomes as described in the Table 10 below:

Table 10: Completeness of cancer information in Ontario 2003

2002-2003	Completeness of information			
	Incidence	Staging	Wait Times	Treated Cases
Surgery	100%	0%	0%	95%
Chemotherapy	100%	38%	55%	45%
Radiotherapy	100%	60%	70%	70%

The cancer information management strategy developed to address these gaps is well underway, but careful targeted additional investment is required to fulfill the information requirements of Cancer Care Ontario and the cancer system as a whole. Most of the actions recommended in the Ontario Cancer Plan rely on implementation of these plans. In order to meet these needs, Cancer Care Ontario must build on the considerable work completed to date to:

- Develop an effective reporting system so that indicators of performance are relevant, easily understood and readily available
- Enhance data stores to include data about service modalities currently not captured (e.g. palliative care); improve utility of data gathered by other sources (e.g. risk factor surveillance); and expand capture of data to cover the entire provincial cancer system (e.g. systemic therapy, pathology)
- Expand the capacity to manipulate and interpret the information effectively and swiftly to ensure it is used effectively. Technical and human resources are required to accomplish this goal

Performance measurement and management has become a core discipline for Cancer Care Ontario, however, continued investment in performance measurement and accountability is necessary. Cancer Care Ontario already has accountability mechanisms in place to help ensure that care is provided according to standards and guidelines. They are:

- **Integrated Cancer Program (ICP) Agreements**: Under the ICP Agreements, the hospital agrees to work with Cancer Care Ontario in the development, implementation and reporting of cancer care according to provincial standards. The Agreement includes a set of performance indicators that are tied to funding decisions, and a minimum dataset that delineates reporting requirements.
- **Ontario Breast Screening Program (OBSP) Agreements:** Cancer Care Ontario has agreements in place with approximately 100 organizations, including ICPs and affiliates, to provide breast screening services. The Agreement outlines explicit standards, which are monitored to ensure quality.
- **The New Drug Funding Program (NDFP)**: Cancer Care Ontario has agreements in place with 92 hospitals that requires hospitals to use new drugs according to guidelines developed by Cancer Care Ontario's Program in Evidence-Based Care. Hospital compliance is regularly evaluated.

Action Plan #20

Implement a framework for indicator reporting at the program, organizational and systems levels to improve quality

Description

Quality benchmarks provide a tool for understanding system performance and identifying where improvements must be made.

- The Cancer Quality Council of Ontario's (CQCO) inaugural *Strengthening the Quality of Cancer Services in Ontario* stated that performance measurement requires improving the ability to measure 100% of the services delivered.

Cancer Care Ontario has a knowledge and information management role to ensure quality for all cancer patients across the continuum of care, wherever they may receive services in the province. By standardizing and enhancing systems, this action plan will identify and fulfill performance-reporting requirements at all levels. Cancer Care Ontario will implement provincial standards for electronic collection and reporting of select performance indicators at the program, organization and system levels.

- Cancer 2020, a long-term plan for cancer prevention and early detection, includes approximately 20 targets, which will be used as the basis for indicator measurement and annual reporting (see Action Plan #6).
- Implementation of new clinical standards will require new and enhanced support and monitoring systems (see Action Plans #1 and 2).
- Implementation of the provincial cancer plan and accountability agreements will define associated requirements for new performance reporting systems.

Priorities will include the CQCO public report on a core set of indicators of cancer system performance (scheduled for release in early 2005); the development and dissemination of products on cancer risks and screening to support Cancer 2020; and selected program-related performance indicators to support priority actions noted above.

Deliverables – Year one to three

- Develop and continue to enhance an indicator reporting framework, which defines, structures and delivers Cancer Care Ontario's information and reporting requirements
- Enhance the framework to include social and patient reporting
- Develop effective mechanisms to capture required data from providers
- Analyze indicator data – reporting to key audiences to effect quality improvement and accountability

Outcomes

- Objective evidence of the improved quality of cancer care and outcomes of screening and treatment
- Measurement of practice against clinical practice guidelines
- Greater accountability among providers to deliver high quality care (e.g. by publicly reporting measures of regional performance)
- Improved evidence-based choices for consumers and purchasers
- Regular reporting of provincial trends in demand for, access to, and quality of cancer care service delivery to support better planning of resource allocations
- New opportunities identified to shift to lower cost alternatives, by tracking measures across the entire spectrum of cancer care

Action Plan #21

Expand the scope and quality of data collected for performance monitoring and system planning

Description

Cancer Care Ontario will expand the scope and quality of data collected for performance monitoring by:

- Enhancing data stores to meet performance reporting and planning requirements;
- Continuing to build upon the information management strategy to date, and expand out of traditional 'three modalities' to support information requirements to meet clinical standards across the continuum of care (e.g. diagnostics, palliation).

Deliverables – Years one to three

Stage capture

- Design and implement changes required to support the standardized collection of stage data from all hospitals undertaking cancer surgery

Pathology Information Management System (PIMS)

Expand and enhance the real time capture of pathology information through PIMS to determine appropriateness of care delivered and results obtained. Over the three years PIMS will enable Cancer Care Ontario to:

- Standardize definition of data elements and implement real time data quality monitoring across hospitals, labs and Cancer Care Ontario to improve quality
- Expand PIMs to include access for clinicians to pathology reporting on-line

Cancer risk factor surveillance

- Broaden routine cancer risk factor surveillance to track progress on Cancer 2020 cancer prevention and screening) targets
- Use Rapid Risk Factor Surveillance surveys and extract them into information products for planners

Oncology Patient Information System/Computerized Physician Order Entry (OPIS/CPOE)

- Enhance the quality and safety of systemic therapy in Ontario by using integrated technology and enhanced functionality and improved capture of all systemic therapy data for the Province. This will be done by implementing computerized physician order entry (OPIS/CPOE systems) to support the safe delivery of systemic therapy for 70% of patients in Ontario

Additional data stores required to support actions in the Ontario Cancer Plan

- Continue to identify new data requirements from indicators framework and enhance data stores, including: pathology (PIMS), systemic therapy (CPOE), surgery, screening, risk factors, palliative care, human resources and diagnostic imaging

Expected Outcomes

- Robust, deep and wide Cancer Care Ontario data holdings to support the description of the continuum of care experienced across Ontario
- Integration of the College of American Pathologists checklist and generate indicators, as well as relevant surgical indicators

Action Plan #22

Accelerate data extraction, analysis and reporting cycles for ongoing performance improvement that includes data management, warehouse, intelligence tools, and analytic capacity

Description

Enhance Cancer Care Ontario's analytic capability adding technical and human resources to better leverage its data holdings and meet increasing demand for broader and deeper access to information.

- Enhance data management technologies through an integrated data repository, utilizing data marts and enhanced business intelligence tools to ease access to key information for planning and decision making.

- Establishing a skilled and efficient informatics team that generates and disseminates information about the occurrence of cancer, antecedent determinants, care and subsequent outcomes to planners, manager, funders, researchers and other decision makers, both within Ontario and beyond.

Deliverables – Years one to three

Analytic capacity

- Add resources with skills in epidemiology, economics, geomatics, costing and data linkage

- Ensure appropriate organizational structure, roles, skill sets, and orientation to ensure users of information are supported

Data warehouse

- Ensure ongoing operational integrity, quality and alignment of data management structures and technology with Cancer Care Ontario strategies and requirements by: addressing policies, standards, architecture, roles, operating change management controls, tools, methods and quality assurance.

- Expand integration of data repository in year one; complete integration by year three

- Create two new data marts in year one, and six data marts by year three

- Implement enhanced business intelligence tools to support user access to critical information

Other projects

Cancer Care Ontario proposes to link cervical screening results with the clinical outcomes (via the Registry) and link with billing data to fulfill indicator requirements related to diagnostic service utilization and adherence to clinical guidelines. Cancer Care Ontario will also make modest investments in information technology capacity over the next three years to:

- Enhance support for the Information Management strategy and Cancer Care Ontario work plan
- Enhance support for Information Management strategy project priorities and Cancer Care Ontario operations
- Complete the work plan and to cover equipment lease cost (incremental costs required)

Expected outcomes

- Data stores will be fully and appropriately utilized to support decision making and performance monitoring requirements of the Ontario Cancer Plan
- Users will have direct access to key indicators on an as needed basis
- Data access and management practices will adhere to industry and regulatory standards
- Enhanced analytic requirements identified through the cancer planning process (e.g. multi-year funding, geomatics, risk factor surveillance) will be supported

Action Plan #23

Implement new performance reporting systems associated with accountability agreements and implementation of the Ontario Cancer Plan

Description

Cancer Care Ontario will implement new performance reporting systems associated with accountability agreements and implementation of the Ontario Cancer Plan.

Deliverables – Year one

- Use updated cancer care profile data as well as the system level quality indicators adopted and used for regional planning; add general indicators to track progress of each action plan
- Use indicators for accountability at the local or regional levels where cancer services are being provided. Through the creation of regional programs, a common set of indicators will be developed and used to determine if services provided are consistent with standards. Each member of the regional program would be required to make a commitment to use the provincial standards and measures so that quality of cancer care can be evaluated objectively at the local level, and targeted improvements can be put in place
- Require each member of the regional program to meet a minimum standard of performance

Expected outcomes

- Clearly understood expectations for cancer service providers
- Improved cancer system performance across the province
- Greater equity in cancer service delivery across the province
- Identification of best practice for transfer to other locations/organizations
- Targeted remedies for services not meeting standards

9. Priority 6
Cancer research

- Cancer research has produced significant advances in treatment modalities, improved survival and quality of life
- Co-ordinated cancer research funding in Ontario is essential to achieve the next level of gains/successes for cancer patients
- Focused research efforts through a Cancer Research Council of Ontario are needed to address priorities

Co-ordinating cancer research in Ontario

No other area of medicine is advancing more rapidly in terms of increasing research knowledge than oncology and in no other area is the research imperative greater. Research in Cancer Care Ontario's Division of Preventive Oncology indicates that without major improvements in cancer prevention and treatment, the number of deaths from cancer will double in Ontario in the next 20-25 years. The Ontario government has recognized the cancer research imperative by the creation of the Ontario Cancer Research Network.

Currently, no formally constituted entity exists for the co-ordination of cancer research within Ontario. Funding for research within the province derives from government (both provincial and federal), numerous foundations and several publicly supported non-governmental organizations and industry. Within the province, the majority of government funding flows from the Ministry of Economic Development and Trade through the Ontario Cancer Research Network, while the Ministry of Health and Long-Term Care flows funds through Cancer Care Ontario to Princess Margaret Hospital and cancer research groups and programs across Ontario. In addition, there is the possibility of a third provincial organization being created, again with funding from the Ministry of Economic Development and Trade, that will seek to substantially increase the cancer research base within the province.

In Ontario, the major non-governmental organization that funds cancer research is the Canadian Cancer Society, a national organization comprised of provincial divisions. The provincial divisions collectively contribute to the national research program that operates through the National Cancer Institute of Canada (NCIC), with Ontario being the major contributor and recipient of NCIC funds. Within the Canadian Cancer Society (CCS), there is growing interest among its divisions in assuming a provincial, as well as national, role in supporting cancer research.

Funding from industry involves specific research contracts and grants negotiated by individual investigators or institutions, the exception being industry-sponsored, decentralized clinical trials that are organized by Cancer Care Ontario, Ontario Clinical Oncology Group, or the National Clinical Trials Group operated by the National Cancer Institute of Canada.

The challenges posed by this multiplicity of funding sources are by no means unique to Ontario. They are of even greater magnitude at the national level. Faced with similar challenges, the United Kingdom created the National Cancer Research Institute (NCRI) in April 2001. The NCRI is a government-supported coalition of the 15 largest funders of cancer research, with a board comprised of senior executives from non-governmental organizations, various branches of government and industry, and the public. A similar model is currently being developed in Canada under the auspices of the Canadian Cancer Research Initiative, which is being jointly chaired by the presidents of Cancer Care Ontario and the National Cancer Institute of Canada.

Given Ontario's population and the magnitude of its cancer research program, it is essential to address the challenges of organizing cancer research within the province if we are to fulfill an appropriate role as a leader in the national program. An international panel of experts that reviewed Cancer Care Ontario-supported centres unanimously recognized this need last year, and met with senior executives from the major provincial and federal cancer research funders. For these reasons we are proposing to create a Cancer Research Council of Ontario, appropriately constituted to provide co-ordination and leadership in strategic planning for cancer research within the province.

Focusing Cancer Care Ontario's research efforts

Over the next three years, Cancer Care Ontario will complete its transition from a direct clinical service delivery agency to a knowledge-based organization. The evolved agency will be responsible for ensuring timely access to cancer services and the development of evidence-based clinical practice guidelines. Through its Clinical Council, Cancer Care Ontario will monitor compliance with best practices and patient outcomes. The organization will assess and improve clinical and health system performance of all cancer services in Ontario through improved information management, improved human resource planning in the cancer field and the promotion of better integration of all clinical and cancer research activity.

To fulfill its new mandate, Cancer Care Ontario must maintain and expand its research role in the development and implementation of new treatment modalities, establishment of evidence-based clinical practice guidelines, enhancement of clinical trials activity, and the design of strategies for prevention and introduction of improved models of care delivery. The integration of research and care delivery benefits patients, as well as helps the recruitment and retention of high quality professionals. The shortage of trained professionals in the face of a growing cancer burden is a major challenge internationally. To remain competitive in an international market, it is essential that research be an integral component of all aspects of the cancer system in the province.

As part of its mandate under the *Cancer Act*, Cancer Care Ontario has provided infrastructure support for a broad spectrum of cancer research. This research takes place at Cancer Care Ontario's provincial office, through research networks and units, such as the Ontario Cancer Genetics Network and outcomes, evidence-based care and health services and supportive care research units in Kingston and Hamilton. It also occurs in Cancer Care Ontario-supported cancer treatment centres and their research facilities around the province.

The research budget of Cancer Care Ontario is extremely limited and compares poorly to a number of other cancer agencies. These funds have remained unchanged for more than 20 years and the balance of funding for research has been drawn from Cancer Care Ontario reserves. These funds have been used to provide infrastructure and salary support to research personnel and trainees, whose research has also been supported by investment with research operating support from peer review agencies and industry, primarily in the area of clinical trials. Cancer Care Ontario's ability to sustain this level of support is now severely threatened by the continuing depletion of its capital reserves that have been used increasingly to meet essential service demands. The financial challenge is compounded by the current investment climate where there are reduced returns on reserve capital, as well as by a decline in public donations and bequests.

Cancer Care Ontario has recognized that it must seek new partnerships and re-position itself to take advantage of new funding opportunities. Cancer Care Ontario has proactively established partnerships with the Canadian Institute for Health Research, industry, publicly supported cancer research organizations such as the National Ovarian Cancer Association and private individuals. These partnerships have been used to create much needed career development programs for clinician scientists and professional trainees.

Action Plan #24

Coordinate cancer research initiatives across Ontario by implementing a Cancer Research Council for Ontario and establishing networks that address Cancer Care Ontario's priorities

Deliverables - Years one to three

- Establish a highly credible international research advisory board to advise on the strategic research directions for Cancer Care Ontario
- Identify priority themes to develop co-ordinated research initiatives (patterns of cancer care, population-based molecular studies of cancer risk and outcome, molecular functional and anatomic imaging and experimental therapeutics)
- Create a research executive management committee responsible for co-ordinating networks in priority research areas
- Implement research partnership agreements with ICPs and the host hospitals/universities
- Restructure research funding along thematic, multi-disciplinary lines involving multiple institutions and funding partners
- Identify new sources of funds by pursuing partnerships with CCS and OCRN and re-negotiate funding for Cancer Care Ontario research in joint discussions with the Ministry of Health and Long-Term Care and the Ministry of Economic Development and Trade
- Determine feasibility/desirability of establishing a Cancer Care Ontario research institute as a wholly owned subsidiary of Cancer Care Ontario
- Promote the establishment of a Cancer Research Council for Ontario

Outcomes

- Enhanced credibility, quality assurance and external perspective
- Increased alignment of research agenda with Cancer Care Ontario priorities
- Increased research co-ordination among ICPs and other research partners
- Co-operative funding of a Cancer Care Ontario co-ordinated research program
- Recruitment flexibility and renewal for the career scientist program
- Maintained or increased Cancer Care Ontario research budget
- Increased access to external funding and external partners
- Unified voice for government
- Improved representation of Ontario in national cancer research initiatives

10. Implementation: Factors for success

- Strong partnerships
- Support of the Government of Ontario
- Leadership at the provincial and regional levels
- Policy changes
- Monitoring and Evaluation

What is needed to implement the Ontario Cancer Plan?

The Ontario Cancer Plan will be implemented in the same way that it was developed – through the collaboration of cancer partners, the government and Cancer Care Ontario. Each partner recognizes the critical factors for success. Some of the recommendations in the Plan are time sensitive and require swift decision and response.

Cancer partners

- Shared understanding of the need for action
- Support for recommended action plans
- Commitment to participate in execution of the plan

Government

- Public endorsement
- Commitment to act now on specific, time sensitive action plans
- Targeted investments
- Collaboration with Cancer Care Ontario cancer stakeholders to advance specialized provincial disease management strategy

Cancer Care Ontario

- Provincial leadership
- Strategic partnerships
- Funding incentives to stimulate improvements in quality
- Sponsoring activities that encourage innovation
- Ongoing improvements of specialized data for planning and decision making
- Knowledge transfer and accelerated uptake of new evidence
- Targeted, timely implementation of action plans
- Synergy with broader health system changes

Regions

- Decentralized regional leadership for implementation of provincial standards in response to local needs
- Commitment to collective action and new accountability relationships with Cancer Care Ontario
- Active engagement and input from cancer patients, public, volunteers and consumer organizations

Policy changes

The Ontario Cancer Plan makes a number of policy-level recommendations for the Ministry.

- Over time, all breast screening in the province should be affiliated with the Ontario Breast Screening Program as a means to support recruitment and quality targets
- Ongoing Ministry support for the development and implementation of rate-volume-complexity (multi-year) funding for cancer services
- Ongoing Ministry commitment to the development of a co-ordinated drug review process for new anti-cancer drugs
- Ongoing Ministry commitment to supporting innovation in the cancer system and to support innovative use of health human resources by addressing scope of practice issues with the health regulatory bodies
- The development of an approach to the distribution and use of the $5-million innovation fund for the cancer system announced in the May 2004 Ontario budget
- In the future, new funds for incremental cancer service volumes should be steered by Cancer Care Ontario to encourage the use of guidelines and fulfillment of program and organizational standards
- Planning approvals for cancer-related capital projects should be given priority status
- The rules governing the purchase of radiation therapy equipment should allow for new and emerging technologies of proven benefit

Monitoring and Evaluation

- Public reporting and formal progress reports
- Ongoing refinement of action plans
- Specific targets will be set to ensure progress against objectives

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Appendices

Appendix A: Regional Plan Inputs

Appendix B: Ontario Cancer Plan: Rationale, Scope and Process

Appendix C: Financial Details

Appendix D: Methodology

Appendix E: Glossary of Terms and Acronyms

Appendix A:

Regional Plan Inputs

This appendix presents a summary of the inputs from the 11 regional plans into the Provincial Cancer Plan. Each regional input summary is organized into six sections:

1. Regional Profiles
2. Areas of strength; areas for improvement
3. Strategic Initiatives
4. Current programs/initiatives
5. Extent of stakeholder engagement
6. Contribution to Provincial Cancer Plan

Central East Region
(Durham, York and Simcoe/Muskoka)

1. Regional Profile

Population

- About 2 million people in large geographical area: Cobourg to Collingwood, Ajax-Oshawa to Muskoka-Haliburton
- Urban-rural mix with urban population growing rapidly in numbers, rural population growing proportionately faster in over 50 years age group
- Population growing at twice the provincial average (8.4% increase between 2004 – 2007) with corresponding increase in cancer incidence/mortality rates
- Large minority population

Areas of Strength

- Lakeridge, Peterborough Regional Health Centre, Rouge Valley Health System working together to develop oncology services and share a common health information system
- Some hospitals are administered as a single service unit in the Durham Region; Ajax/Pickering & LHC working together and share a common information system
- New hospital facilities in the areas of high growth (Barrie and Newmarket)
- R.S. McLaughlin Durham Regional Cancer Centre (2006 opening) will increase capacity and utilization rates, most particularly in radiation therapy
- 2 more regional cancer centres planned (Southlake; Simcoe-Muskoka)

Areas for Improvement

- Currently there is no full-service cancer treatment facility in the region. As a result, lifetime utilization of radiation therapy is well below provincial average; for systemic therapy single physician providers administer care in a number of locations.
- Most under-serviced region for radiation therapy; amongst the least well served for diagnostics, surgery, and palliative care. (Waiting times for diagnostics can exceed 5 months)
- Evidence of significant variation in practice
- Shortage of GPs – 30% population have no GP

Central East Region
(Durham, York and Simcoe/Muskoka)

- Higher level of cancer risk factors than Ontario average
- Inability to provide adequate, equitable palliative care services; large variation in support services
- Access to screening services suboptimal and inequitable (partly due to shortage of GPs)
- Diagnostic phase poorly coordinated, not patient focused; better information needed for patients in treatment options
- Electronic information sharing of health related information among regional partners is essential to coordinate the patient journey. Strong need to establish IT capabilities to communicate data and patient-related information between cancer service providers.

Central East Region
(Durham, York and Simcoe/Muskoka)

2. Strategic Initiatives

Strategic Initiative	Description
1. 3 regional cancer centres & regional networks	• Durham Regional Cancer Centre (2006); Simcoe Muskoka Region Cancer Centre (2007); Southlake Regional Cancer Centre (2007) • Regional networks need to plan in a coordinated way, to recommend where resources need to be allocated to ensure appropriate access to screening, diagnosis, cancer surgery, chemotherapy, radiation therapy, palliative care; provide rapid access to patient care records
2. Regional disease specific multi-disciplinary site groups	• Establish patient-centred disease site groups for breast cancer, colon cancer, lung cancer, and prostate cancer • Network approach to support regional planning and implementation • Groups would agree on evidence-based disease management policies for region; develop care paths; develop service delivery plans; develop surgical activity plan; conduct tumour site-specific audits and independent navigation processes
3. Co-ordinated cancer diagnosis through rapid access units – Rapid Access Diagnostic Units	• 'One-stop' access for patients with breast, prostate, lung, colorectal cancers, to smooth the journey from diagnosis to treatment; to ensure appropriate use of diagnostic imaging services by adopting guidelines • Incorporate navigator function to guide patients and families and address education & supportive care needs
4. Palliative care	• Palliative Care steering committee to develop standards and identify and co-ordinate activities and services for existing palliative care networks • Interdisciplinary expert palliative care consultation teams to support GPs in providing palliative care 24/7
5. Prevention & screening programs	• Target obesity through co-ordinated effort to promote physical activity, healthy eating, healthy weight (engaging public health units) • Expand OBSP locations & affiliations, ensuring they meet CAR-MAP standards

Central East Region
(Durham, York and Simcoe/Muskoka)

Strategic Initiative	Description
6. Communication plan to reach 'communities within communities'	• Create partnerships to provide information on prevention, detection, treatment in culturally-sensitive and user-friendly way (emphasis on French, Aboriginal, Asian communities) • Co-ordinate efforts; involve community; build on existing community resources

Central East Region
(Durham, York and Simcoe/Muskoka)

3. Current Programs/Innovations

Program / Innovation	Description
1. Physician extenders, such as ACNPs, hospitalist, GPOs	• GPOs provide care and deliver treatment under supervision of oncologists in the absence (or shortage of) oncologists allowing oncologists to work to maximum potential (DRCC) • Nurse clinicians can undertake advanced practice roles in screening centres, patient assessment during treatment and follow-up, pain and symptom management, amongst other roles. • ACNPs (SRHC)
2. Pathology assistant model	• Recruitment of pathology assistants can extend the workload capacity of pathologists who are in short supply (SRHC)
3. Palliative care	• Expanded Durham Regional Palliative Care initiative • Medical Director of Palliative Care (SRHC) • Model to promote home death for patients/families wishing it (Simcoe County CCAC and Durham Palliative Care Alliance) • PalCare Network – 2 outpatient clinics providing patient assessment by multi-disciplinary team (mostly for patients without GP) (SRHC) • Revised referral tool to palliative services (SRHC)
4. Standardized evidence based chemotherapy protocols (improved & consistent care) (DRCC)	
5. Team-based care with clerical support (improve MD & nurse effectiveness) DRCC	
6. Patient scheduling	• Outpatient & chair-scheduling project (DRCC) • Computerized scheduling process (RVH) • Resource & guidelines-based patient scheduling system (SHRC)
7. Multidisciplinary radiation oncologist/medical oncologist consultation (DRCC) and its regional program (Peterborough and effective April 1, 2005 Scarborough)	
8. Revised referral process (improve patient access) (RVH)	

Central East Region
(Durham, York and Simcoe/Muskoka)

Program / Innovation	Description
9. New patient clinic to streamline process for seeing new consults (RVH)	
10. Common pain/symptom management tool, common DNR process, system response kit (DHC)	
11. Model to support oncology skills & knowledge development of visiting staff. (Simcoe County CCAC)	
12. Co-located in- and outpatient cancer units (SRHC)	
13. Recruitment and support strategy for francophone health care providers for cancer program	
14. Errors and incidents reporting: anonymous hot-line to report errors & clinical practice concerns ('find & fix' instead of 'blame & shame') (SRHC)	
15. Electronic health records	• Hospital-based electronic health record (LHC/DRCC) • Plan to expand DRCC Regional Health Record • Electronic documentation on in- and outpatient units (SRHC) • Regional patient health record
16. Other technology innovations	• North Network • PACS (DRCC; RVH; SRHC) • Electronic nursing documentation (RVH) • Clinical Trials Management System (OCRN initiative) (DRCC; RVH; SRHC) • Organizational internet, program intranet sites, MDS-RAI as common assessment tool (Simcoe County CCAC), including electronic care plans, secure e-mail, market share tool
17. DRCC Regional Program	• Medical and radiation oncology in Peterborough • Chemotherapy delivery in Peterborough • Radiation oncology consults at Rouge Valley Health System
18. DRCC Radiation Therapy Delivery	• Durham Evening Clinic at Sunnybrook & Women's (DECSW); up to 1000 treated cases per year • Radiation treatment delivery in Kingston

Central East Region
(Durham, York and Simcoe/Muskoka)

4. Extent of Stakeholder Engagement

- Task Force of 14, representing 12 stakeholder groups. Task Force held 2 full meetings; steering committee held 3 meetings and numerous teleconferences
- 76 stakeholder contacts in Durham, Simcoe/Muskoka, and York Regions; input gathered through meetings, letters, and phone calls
- 5 focus groups (139 individuals), 4 regional in Durham, HKPR, Simcoe/Muskoka, York and 1 Palliative Care session which involved all of central east

Central East Region
(Durham, York and Simcoe/Muskoka)

5. Contribution to Provincial Priorities and Cancer Action Plans

Strategic Initiative	Provincial Priority	Cancer Action Plan
1. 3 regional cancer centres & regional networks	2. Regional cancer services	4. Advance regional cancer programs
2. Regional disease specific multi-disciplinary site groups	2. Regional cancer services	4. Advance regional cancer programs
3. Co-ordinated cancer diagnosis through Rapid Access Diagnostic Units	4. Rapid access strategies	16. Fund two Rapid Access Diagnostic Units
4. Palliative care	1. Provincial standards & guidelines 2. Regional cancer services	2. Develop and use new cancer program standards 5. Performance measurement & accountability
5. Prevention & screening programs	3. Closing the gap between demand and capacity	7. Implement Cancer 2020: Screening
6. Communication plan to rea 'communities within communities'	3. Closing the gap between demand and capacity	6. Implement Cancer 2020: Prevention

Toronto Region

1. Regional Profile

Population

- 2.64 million people (162 sq kms), representing 47.7% of the total population of the Greater Toronto Area
- Lowest population increase (6.9%) of region, but will continue to have the greatest proportion of people; highest rate of growth will occur in population ages 45-65
- Most ethnically diverse city in North America (more than 100 different ethnic groups)
- 45.7% have first language other than English or French
- 50% of population growth will be from immigration
- Highest proportion of families (22.6%) below the low income cut-off than the rest of the province (14.4%)

Areas of Strength

- Wealth of resources & expertise available in 10 acute care hospitals, 5 teaching hospitals fully affiliated with U o f T
- Two of the largest comprehensive cancer centres in North America providing services to entire GTA; Hospital for Sick Children provides full range of cancer services for children; 5 CCACs
- Wealth of community support services through other organizations
- Academic facilities provide leadership in research & education opportunities through affiliations with U of T and other teaching programs; clinical research; access to new therapies; large clinical trials programs

Toronto Region

Areas for Improvement

- No formal cancer program structure for the regional level
- Limited development of formal linkages across full continuum of services to develop a fully networked, integrated cancer system
- Need for co-ordination of care pathways horizontally across institutional boundaries and vertically between hospitals & community providers
- Community hospitals suffer from lack of dedicated & protected funding for cancer services
- No organized system/network for knowledge transfer
- Monitoring performance & quality not organized in a regional manner
- Patient access to clinical trials inconsistent at non-RCC organizations
- Population screening statistics well below provincial targets
- Need for analysis & expansion of supportive and palliative care resources among the many providers to provide new care models
- Need to maximize resources particularly due to human resource shortages
- Wait times continue to be a problem (surgery in particular)
- Need to improve organization links with their regional community, addressing unique diverse population needs
- Access to ambulatory cancer services for follow up and supportive care
- DI requires review & implementation of provincial guidelines once developed
- Systemic therapy requires renewal of NDFP & analysis of scope of practice
- Lack of specialized cancer programs & services for large (70,000) Aboriginal population

Toronto Region

2. Strategic Initiatives

Strategic Initiative	Description
1. Patient-centred disease site networks	• Networks to link care across full continuum of care, and include: - Patient-centred co-ordination of cancer care - Regionally based planning of cancer services - Improved functional collaboration among provider organizations in acute care & community settings - Systems for consistent learning & knowledge transfer • Long-term goal to develop network structure for each disease site
2. Storefront clinic	• Alternate service delivery model based on 'storefront' community clinics, to offer patients increased & timely access to clinical & supportive services outside hospital or home care setting • Aim to provide client-focused day treatments as alternative to admission & access to allied health services • Established in ambulatory care centres, urgent care centres, community health centres, free-standing facilities, GP units • Include developing protocols, and referral & case mgmt system
3. Best practices pilot in wound management	• Wound care services developed & tested through evidence-based best practice pilot • Includes standardized comprehensive assessment
4. Breast screening; breast Diagnostic Assessment Units; organized screening sites	• Increase participation in breast cancer screening; increase # OBSP screening affiliate sites • Expand breast Diagnostic Assessment Unit capacity through Combined Breast Diagnostic Centres • Partner with OBSP, public health, community hospitals, GPs, etc. at local level to develop targeted recruitment campaigns, perform capacity assessments, implement action strategies to effect change

Toronto Region

Strategic Initiative	Description
5. Access to quality cancer surgery	• Method to improve & sustain access to quality cancer surgery (added volumes) • Plan to address incremental new surgical volumes
6. Colorectal cancer screening	• Evaluation of current CRC capacity for large bowel endoscopy, referral patterns for FOBT, flexible sigmoidoscopy & colonoscopy; anticipated demands for screening • Includes comparison & economic evaluation of different models of organizing screening services; evaluation of alternate providers of flexible sigmoidoscopy • Includes IT to link screening efforts to GI Network

Toronto Region

3. Current Programs/Innovations

Program / Innovation	Description
1. Nurse Sigmoidoscopy	• Scarborough Hospital
2. Home chemo program	• Scarborough Hospital liases with CCACs
3. Community Oncologists of Metro Toronto (COMET)	• Collaborative committee of oncologists in community hospitals, for information sharing & group organization
4. OBSP-affiliated comprehensive breast assessment centre	• St Mike's Hospital
5. Oncology-specific performance measures	• Waiting times for surgery, medical & radiation oncology posted on public Web site of UHN • Pathology turnaround times posted on Web site
6. Evening radiation treatment facility	• TSRCC/S&W partnered with Durham region • PMH partnered with Credit Valley Hospital / Peel Region
7. Toronto Hospice Palliative Care Network	• Collaboration of many regional organizations
8. HPCNet Program (palliative care)	• Palliative Care Centre at Mount Sinai, Toronto CCAC, and area hospices developed HPCNet program to provide integrated in-home palliative services
9. Patient-centred, multi-disciplinary clinic for breast cancer	• Clinic for mgmt of locally advanced breast cancer & inflammatory breast cancer, focusing on young women that face unique psychosocial & treatment challenges
10. Breast prevention	• Education for women on breast health & self-examination
11. Sarcoma program	• PMH/UHN & Mount Sinai
12. Patient safety	• Patient safety collaborative at S&W, including initiative to create safety culture by modeling a system-focused, non-punitive response to medication incident reports, and applying system-based investigation & redesign to reported incidents
13. Breast screening program for Tamil women	• Special program clinics such as ostomy and patient education clinics run by advanced practice nurses are held at TSRCC/S&W.
14. Dose robotics system	• Hospital-wide dose robotics system at Scarborough Hospital

Toronto Region

Program / Innovation	Description
15. Ostomy clinics for cancer patients	• TSRCC/S&W
16. E-record	• PMH, TGH, HN & MSH can view info in electronic patient record (reduce transcription of hard copy reports); can also connect to MDS labs
17. Fax-out system	• TSRCC/S&W distributes consults notes to >3,000 GPs at time of transcription

4. Extent of Stakeholder Engagement

- Planning Task Force of 30 professionals representing 18 organizations, as well as members from DHC, MOHLTC, CCACs and Public Health. Task Force held 3 meetings in development of plan
- Expert panels in each of service chapters, including supportive care panel of 45
- Consultations for the plan with CEOs and Presidents of hospitals, joint committees and stakeholders

5. Contribution to Provincial Priorities and Cancer Action Plans

Strategic Initiative	Provincial Priority	Cancer Action Plan
1. Patient-centred disease site networks	2. Regional cancer services	4. Advance regional cancer programs
2. Storefront clinic and best practices pilot in wound management	4. Rapid access strategies	16. Fund two Rapid Access Diagnostic Units
3. Breast screening; breast Diagnostic Assessment Units; organized screening sites	3. Closing the gap between demand and capacity	7. Implement Cancer 2020: Screening
4. Access to quality cancer surgery	3. Closing the gap between demand and capacity	12. Increase capacity to meet projected volumes
5. Colorectal cancer screening	4. Rapid access strategies	17. Fund and support innovative health human resources

Central South/West Region (Hamilton)

1. Regional Profile

Population

- 2.3 million population, covering 8 counties
- Central South/West region referral area evolving as other centres develop – includes for this 3-year planning process, in addition to Hamilton-Niagara regions, Cambridge Memorial Hospital, Joseph Brant Hospital, and Guelph General Hospital
- Mix of rural and urban communities with difference in determinants of health
- Significant population of First Nations and Metis, including 2 reserves and large (11,000) Aboriginal population living off reserve
- Niagara, in particular, is an area of increasing growth; it has a larger population over the age of 65 compared to rest of province and trend expected to continue over next 10 years

Areas of Strength

- Long history of successful partnerships with community hospitals & partners
- Well-positioned to augment level of service delivered in community
- Regional Cancer Centre provides two key treatments: ambulatory chemotherapy and radiation therapy & is sole provider of radiation therapy for region – acute services primarily located at Henderson General Hospital
- Community partners provide many non-complex cancer care services, including 5 community oncology clinics
- Education programs through McMaster University, the Michener Institute, and Mohawk College across health professional disciplines
- Strong collaborative research program in clinical trials research between JCC & McMaster – opportunity to expand clinical trials to other community sites. Hotel Dieu in Niagara region has large clinical trials program.

Central South/West Region (Hamilton)

Areas for Improvement

- Radiation wait times 2nd longest in Ontario
- Health human resource shortages, including shortage of GPs (e.g. 26% of cancer patients in Niagara do not have GP) – GP shortage impacts early detection & palliative care
- Lack of co-ordination, integration & continuity of care make it difficult for cancer patients & families to navigate system
- Prevention & early detection targets not met
- Patient information systems not integrated

Central South/West Region (Hamilton)

2. Strategic Initiatives

Strategic Initiative	Description
1. Build capacity through innovation in community to contribute to co-ordinated system of high quality cancer services	• #1 initiative • Re-design so that more partners can contribute • Build capacity in community • Implement regional co-ordinated systems approach • Develop regional HR plan • Develop innovative models of shared care • Design accountability frameworks
2. Regional networks	• Use existing community oncology networks • Build accountability framework for service delivery, quality standards, quality reporting
3. Patient Navigator models • Interlink Community Oncology Nursing model • Aboriginal navigator / liaison model	• Access to co-ordinated system of cancer services facilitated by cadre of Interlink nurses • Facilitates integration, co-ordination, continuity of care • Acts as resource to other healthcare providers • Co-ordination of Aboriginal issues with CCO – ACCU
4. Rapid Access Diagnostics Units	• Develop RADUs at JCC & community oncology clinics • RADU model to be expanded for women outside OBSP who require work-up of screen-detected abnormalities, as well as those at high risk for breast cancer, as well as colorectal, lung & other disease site groups
5. Early detection of breast, cervix, colorectal cancers	• Expand FPM model for OBSP recruitment & retention to include breast in all counties, as well as cervical cancer, colorectal cancer • Regional plan to increase recruitment, including referrals for women without GPs • Facilitate full assessment models (surgery, radiology, pathology) at all screening sites
6. Academic Department of Oncology at McMaster	• Promote & sustain excellence in oncology across disciplines • Facilitate design of educational programs • Address strategic issues of recruitment, retention, etc.

Central South/West Region (Hamilton)

3. Current Programs/Innovations

Program / Innovation	Description
1. Patient Navigator (OBSP Breast Assessment Nurse Navigator)	• On-site triple assessment model of care (radiology, surgery, pathology) clinic, with nurse navigator who provides support & referral to women with screen-detected abnormalities
2. Advanced Practice Nurses (APNs)	• Responsible for education, research, management of complex cases (hematology, breast cancer, gynecological cancer, head & neck cancer) • Provide pain & symptom management • Promote expert oncology nursing care (in-patient to out-patient to community care) • Assume medical directives • Advance quality of care by disseminating best practices
3. Disease Site Team (DST) Co-ordinators	• Co-ordinate each DST • Develop on-line inventory of evidence-based guidelines • Manage triage of new patients referred, ensure access to appropriate diagnostic & treatment processes
• Disease Site Team (DST) Council	• Forum for discussing quality of care, such as quality standards; resource & process implications of new practices, tools to help co-ordinate best practices (DST Portal); specific process & quality outcome indicators • Promote more proactive planning & research transfer so that treatments likely to improve patient care are adopted ASAP
4. Community oncology program	• Provides administrative leadership & support for delivery of services across continuum of care • Treatment provided through 5 community oncology clinics, 2 peripheral clinics; screening and assessment for breast cancer at 11 sites
5. Primary care nursing	• Act as key contact for individual patients; support patients & families through cancer journey • Carry own caseload
6. Interlink nursing	• Implementing pilot project for adult Interlink model

Central South/West Region (Hamilton)

Program / Innovation	Description
7. Palliative Medicine Fellowship Sponsorship	• 3 palliative medicine fellows jointly funded by 5 foundations to increase capacity of palliative care MDs
8. General Practitioners in Oncology (GPOs)	• Model developed whereby 1 medical oncologist acted in consulting role to 6 GPOs who implemented treatment delivery plans
9. Family Physician Model (FPM) for OBSP recruitment & retention	• Recruited GPs to attract eligible patients through personalized letters prepared by OBSP office
10. Decision Support/Quality Improvement Dept	• Undertook QI projects, including chemo wait time study, clinical utilization study, formulary software to support standards of practice • Developed projections for radiation treatment capacity • Data co-ordinators now established in each DST to help interpret data in practice decisions and to inform design of patient information system that tracks patient outcomes
11. Express chemo	• Allows centre to differentiate patients requiring chemo-therapy with transfusion times <15 minutes Vs those requiring longer chemo admin time • Involved nursing allocation, space utilization, pharmacy protocols, patient communication
12. Alternate Day Chemo	• Allows for more even distribution of patients & more efficient use of chemotherapy suite space • Expected to enable consultation at JCC & treatment delivery in community oncology clinic
13. Clinical Trials Funding Model	• Department financially self-sustaining • Participate in balance of peer-reviewed & industry clinical trials
14. Regional networks	• Co-ordinate activities; enable partners to review service volumes & quality indicators in order to improve delivery of services
15. Pharmacy Technician Training Program	• Certification program through Mohawk College to standardize training levels
16. Digital Stereostatic Core Biopsy Equipment	• OBSP clinics use technology to provide definitive diagnosis of some radiological lesions

Central South/West Region (Hamilton)

Program / Innovation	Description
17. PWL (Patient Wait List)	• PWL software in OPIS to measure patient waits from decision to treat, treatment planning to delivery • Track wait times & use by patient & DST • Used to monitor system to re-allocate resources & prioritize patients based on clinical guidelines
18. Pharmacy Network Communications Software	• Shared software to track systemic therapy needs across region
19. Febrile Neutropenia Protocol	• A clinical pathway model for the empiric management of febrile neutropenia that is evidence-based and includes a pre-printed physician order sheet, a patient information booklet, a patient identification card to alert ER triage nurse and ongoing education for staff • Best practice shared across regional community oncology program
20. Unattached Palliative Patient Roster	• Collaboration with family physicians who are willing to be on an Academy of Medicine roster to accept palliative patients who don't have family physicians.

4. Extent of Stakeholder Engagement

- Task force of 21 members representing 7 stakeholders – 4 meetings
- Consultation teams in 6 regions
- 16 hospitals/health care centres

Central South/West Region (Hamilton)

5. Contribution to Provincial Priorities and Cancer Action Plans

Strategic Initiative	Provincial Priority	Cancer Action Plan
1. Build capacity through innovation in community to contribute to co-ordinated system of high quality cancer services	2. Regional cancer services	4. Advance regional cancer programs
2. Regional networks	2. Regional cancer services	4. Advance regional cancer programs
3. Patient Navigator models • Interlink Community Oncology Nursing model • Aboriginal navigator / liaison model	4. Rapid access strategies	17. Fund and support innovative health human resources
4. Rapid Access Diagnostic Units	4. Rapid access strategies	16. Fund two Rapid Access Diagnostic Units
5. Early detection of breast, cervix, colorectal cancers	3. Closing the gap between demand and capacity	7. Implement Cancer 2020: Screening
6. Academic Department of Oncology at McMaster	6. Research networks	24. Co-ordinate cancer research

Central West Region (Peel)

1. Regional Profile

Population

- 1.5 million, 5 counties – higher growth rate (12.5%) than provincial average (7.18%) by 2007
- Fastest growth rate for over 50 population in province
- One of most culturally diverse populations in Ontario – 54% other than British or Canadian origins compared to 36% in Ontario – 43% of population immigrants (27% provincial)
- Peel & Halton have the highest projected increase in cancer mortality rates (90% higher than provincial average), and higher incidence rate

Areas of Strength

- Shared Services West umbrella well established to share IT, health records, purchasing & recruitment initiatives
- Major hospitals have been participating in Peel-Halton regional planning of cancer services since 2002
- Standardized practice of care in process of being developed by major providers

Areas for Improvement

- Currently no radiation therapy facilities in Central West region – lower utilization rate – new PRCC opening May 2005
- Need for regional networks of care including common patient record, regional tumour site groups, etc.
- Timely access to consultation difficult
- No comprehensive regional staging data available
- Need for better and more evenly distributed supportive and palliative care
- Additional integration of surgeons into cancer care programs is needed to substantially enhance high quality multidisciplinary care
- Need for better & more consistent data gathering
- Need for increased screening, OBSP, and diagnostic services
- Higher level of risk related to ethno-diversity as well as obesity and teenage smoking needs to be addressed through education and primary prevention
- Information for patients and patient navigation need to be enhanced

Central West Region (Peel)

2. Strategic Initiatives

Strategic Initiative	Description
1. Operationalize PRCC	• Targeted to open May 2005 • Introduce radiation therapy services; expand systemic therapy • Consider developing wait times management system • Develop co-ordinated approach to surgery • Need sufficient capacity for imaging resources & pathology
2. Regional disease site teams	• For breast, prostate, lung, colon, lymphoma, gynecologic cancers • Form multi-disciplinary networks • Develop patient navigation program
3. Supportive & palliative care	• Co-ordinated networks of funded supportive & palliative care teams • Use best practice models & apply evidence-based standards • Province-wide issue

Central West Region (Peel)

3. Current Programs/Innovations

Program / Innovation	Description
1. Oncologist extenders	• Hospitalists, GPOs cover in-patients, supervise chemo delivery, first on-call • Nurse practitioners assist with well-patient follow-up assessments • Improved nurse to MD ratio • Improved palliative care physician resources
2. Clinical pharmacists	• Educate patients re medications & adverse events (freeing up oncologists' time)
3. Radiation oncologists	• Radiation oncologists undertake first & follow-up consultations outside PRCC
4. Chemo chair scheduling project	• Chemo chair scheduling project
5. Multidisciplinary site teams	• Created one-stop shop for patients & improved knowledge of nursing & support staff
6. Referral process	• New PRCC referral process • Intention to expand PRCC referral process region-wide • Streamline patients to appropriate MD or re-referred to another organization prior to patient arrival
7. Chemo pump	• Chemo pump program
8. PACS	• PACS introduced at most Peel-Halton hospitals to facilitate digital image transfer among institutions

Central West Region (Peel)

4. Extent of Stakeholder Engagement

- Cancer Plan Task Force of 17 representatives of 8 major stakeholders – 2 meetings and subsequent consultations
- 5 health care centres

5. Contribution to Provincial Priorities and Cancer Action Plans

Strategic Initiative	Provincial Priority	Cancer Action Plan
1. Operationalize PRCC	3. Closing the gap between demand and capacity	9. Fund Post-Construction Operating Plan (PCOP) for eight cancer centres
2. Regional disease site teams	2. Regional cancer services	4. Advance regional cancer programs
3. Supportive & palliative care	1. Provincial standards & guidelines	2. Develop and use new cancer program standards
	2. Regional cancer services	5. Develop regional palliative care programs

Southeast Region (Kingston)

1. Regional Profile

Population

- Population of almost 500,000, (20,000 sq. kms) including the counties of Hastings, Prince Edward, Lennox & Addington, Frontenac, Lanark, and United Counties of Leeds & Grenville
- Half the population in medium-sized cities and towns along 401 corridor, remaining rural population in small to medium-sized communities & townships stretching northwest to Algonquin
- Anticipated population growth of 5% between 2001 to 2007, but 12.1% increase in population over 50 years

Areas of Strength

- World class Cancer Research Institute based at Queen's University
- Academic Palliative Medicine Program
- Well established SEO Health Care Network where ORCC services Eastern Ontario and Central east is serviced by Toronto and KRCC until Durham opens
- Community cancer clinics established in Peterborough, Cobourg, Brockville, Quinte and Perth/Smiths Falls for closer-to-home chemotherapy delivery
- Royal College of Physicians and Surgeons Accredited Residency Training Programs in Radiation Oncology, Medical Oncology and Palliative Care
- Referral patterns from border counties between Southeast & East Ontario regions well established
- KRCC is an academic cancer centre affiliated with Queen's University. Queen's is involved in the palliative care integration project and the Cancer Research Institute, Division of Cancer Care and Epidemiology is involved in the cancer staging project

Areas for Improvement

- Kingston Regional Cancer Centre has space constraints: 300% increase in patient visits & 24% increase in size since mid-1970s
- Increased wait times, especially from space constraints
- OBSP participation rates well below Cancer 2020 target
- No structure/mechanism for region-wide collaboration among cancer providers along the continuum of care
- Little communication or co-ordination across continuum of care between areas within region

Southeast Region (Kingston)

2. Strategic Initiatives

Strategic Initiative	Description
1. Palliative care – integrated delivery system	• Expand Palliative Care Integration Project (refer to programs) • Develop regional palliative patient care communication system using specific web-based technology; incorporate existing handheld technology into web-based system
2. Improving rate of staging	• Increase rate of staging in all hospitals (especially source hospitals)
3. Primary care & diagnostic flow wait times study	• Study to identify barriers & opportunities to further share patient information electronically to reduce the wait time from original MD referral to diagnostic/laboratory or specialist services • Study will inform SEO Health Care Network in the development of their region-wide strategy for diagnostic imaging and lab services, as well as IM services
4. Regional cancer care network for Southeast Ontario	• Links activities & communication of all providers/cancer care bodies • Strengthens & provides accountability structure for collaboration, standards of care, best practice, resource utilization, quality of care efforts underway
5. Regional breast cancer client information management system (CIMS) (Patient wait list system)	• Integrates co-ordinator to facilitate patient passage through system with web-based system to track & monitor patients waiting for treatment procedures & other services • Features real-time multi-user access to wait list

Southeast Region (Kingston)

3. Current Programs/Innovations

Program / Innovation	Description
1. Palliative Care Integration Project (PCIP)	• Developed in 2001 • Developed evidence-based collaborative plans (CCPs); use common, validated assessment tools; apply CCPs & assessment tools in different care settings in region • Features multi-disciplinary collaboration & inter-sectoral applicability
2. Handhelds for palliative care MDs	• Enter & access up-to-date patient care data at point-of-care • Facilitates evidence-based decisions at point-of-care
3. Virtual lung cancer clinic co-ordinator	• Used co-ordinator to organize availability of information & optimize processes to reduce wait times for patients with lung cancer
4. Breast Assessment Program (Patient wait list management)	• Provide high quality diagnostic & surgical services to patients with breast abnormalities; program uses nurse navigators to facilitate passage of patients through various stages of assessment process & to provide support to patients
5. Regional Oncology Nurses Council (RONC)	• Standardize nursing practices; produce evidence-based & best practices; explore innovative roles in nursing; improve quality of patient care; identify education needs for regional nurses and develop education materials
6. E-chart	• Allows easy use of OPIS beyond RCC
7. OPIS 2000	• Longitudinal chemo patient record crossing outpatient & inpatient settings; reduce drug order-entry error; standardize practice between outpatient & inpatients
8. Physician extenders	• GPO's provide support to patients in absence (or shortage) of oncologists
9. Hotel Dieu Hospital Breast Assessment Centre	• Integrated breast assessment centre
10. Community Oncology Program	• Provides administrative leadership and support for delivery of services across continuum of care
11. Primary care nursing	• Act as key contact for individual patients; support patient and families through cancer journey
12. Clinical Pharmacists	• Educate patients regarding medications and adverse events (freeing up oncologist time)

Southeast Region (Kingston)

4. Extent of Stakeholder Engagement

- Task Force of 10 members representing 7 stakeholders – limited consultation because of timelines
- Meetings with cross-section stakeholders in various communities

5. Contribution to Provincial Priorities and Cancer Action Plans

Strategic Initiative	Provincial Priority	Cancer Action Plan
1. Palliative care – integrated delivery system	1. Provincial standards & guidelines 2. Regional cancer services	2. Develop and use new cancer program standards 5. Develop regional palliative care programs
2. Improving rate of staging	5. Performance measurement & accountability	21. Expand the scope and quality of data
3. Primary care & diagnostic flow wait times study	4. Rapid access strategies	18. Fund innovative process improvement projects
4. Regional cancer care network for Southeast Ontario	2. Regional cancer services	4. Advance regional cancer programs
5. Regional breast cancer client information management system (CIMS) (Patient wait list system)	4. Rapid access strategies	18. Fund innovative process improvement projects

Central West Region (Waterloo Region & Wellington County)

1. Regional Profile

Population

- Population about 625,300 (2001), approx. 8,000 sq kms – with greater proportion urban in 4 cities: Cambridge, Kitchener, Waterloo and Guelph
- Projected growth of 8% (2001 – 2007)

Areas of Strength

- New Grand River Regional Cancer Centre/Grand River Hospital offer full range of cancer services across the continuum of care, with integration of services from inception
- New state-of-the-art radiation technology
- Research and Education opportunities with 3 universities & a community college in the region, as well as easy access to 3 additional universities (Western, McMaster, U of T)
- 'Virtual Academic Health Sciences Centre' with academic affiliations to offset lack of medical school in region
- Strong supportive care program with networks developed from beginning
- Community involvement structures in place to support network development
- 'My CARE Source' possibly a first in Ontario patient portal program to enable patient participation in management of treatment and care

Areas for Improvement

- Under-serviced for family physicians and specialists
- No regional mechanism for development, sharing, collaboration of best practices, research, or innovations across region
- Lower than provincial average rate of breast screening; gap between diagnostic assessments & surgical procedure
- Modifiable risk factors at or above provincial average in most areas
- Lower than provincial average in community-based supportive help
- Lack of community palliative/pain and symptom programs, resulting in higher utilization of oncology specialists, emergency department visits, and acute care admissions
- Lack of outreach services & linkages with Wellington County & GRRCC – an area under-serviced in community support services

Central West Region (Waterloo Region & Wellington County)

2. Strategic Initiatives

Strategic Initiative	Description
1. Community oncology clinics	• Develop 2 community oncology clinics, whereby oncology team from GRRCC travels to local clinics. Clinics will provide education, presentations, etc. to local MDs & healthcare providers. Community education & health promotion co-ordinated with patients/public
2. Palliative care team models	• Establish team comprised of pain & symptom mgmt co-ordinator, palliative care MD, GPs, community nurses, nurse practitioner (provides support to community nurses), hospice, admin support • Establish protocols to link team
3. Breast assessment & screening	• Increase by 2 the number of OBSP sites in WR & WC • Increase rate of breast screening to min. 32% participation rate • Develop breast assessment centre to support community GPs in co-ordinating diagnostics • Advocate for CAR certification for all mammography sites
4. Rapid Access Diagnostic Units	• Establish multidisciplinary rapid access DAUs • Includes support for patients & ongoing co-ordination of tests, interventions, follow-up • Provide education, support, health promotion during diagnostic period • Initial focus on lung & skin
5. Patient portal 'My CARE'	• Expand capability of patient portal to allow sharing of lab results; use as communication & education tool for patients in community clinics; access e-patient record; interface with pharmacy system
6. Nurse practitioner follow-up	• Pilot project to establish follow-up clinic with nurse practitioner to provide ongoing follow-up care to cancer patients completing treatment but not discharged to GP for follow-up
7. Oncology rehabilitation program	• Expand chemo exercise program (Well-Fit) into oncology rehab program for all patients undergoing cancer treatment, surgery, radiation, chemo

Central West Region (Waterloo Region & Wellington County)

3. Current Programs/Innovations

Program / Innovation	Description
1. Supportive care co-ordinator	• Co-ordinates care plan & assists patients in navigating journey (GRRCC)
2. Physician model – GPOs	• Support medical oncology in managing oncology & palliative care patients; provide 24/7 call in hospital, clinic, & community (CMH)
3. Palliative care team	• Nurse as lead working with 2 local GPs to manage in-hospital palliative care
4. Healthy lifestyles program	• Healthy eating program & recess revival program at elementary schools with Public Health Unit
5. Patient portal	• My CARE Source patient-enabled web application; links with individual scheduling system, treatment plans; supports patient autonomy through cancer treatments • Empowers patients to manage individual care & treatment through delivery of personalized support & disease management • Includes personal diary; gives ability to self-monitor side effects; access to retail pharmacy for Rx renewals
6. Paperless program	• Paperless & film-less radiation treatment program (GRRCC); supports multi-user access, point-of-care, tracking capabilities
7. Virtual Academic Health Sciences Centre	• Affiliations & programs with UWO, UofWaterloo, Guelph, Wilfred Laurier and McMaster
8. Well-Fit	• Individualized exercise program for people undergoing chemo (assessment, CV training, weight training, flexibility exercises)

Central West Region (Waterloo Region & Wellington County)

4. Extent of Stakeholder Engagement

- Task force of 15 members representing 11 stakeholders, including representatives from MOHLTC, the Region Health Dept. and Public Health Units – 5 meetings
- Community consultations through Web site feedback survey, flyers, newsletter (5000 circulation) and network participation
- Consultations with stakeholders, networks and partners through discussions and focus groups
- 6 hospitals/health care centres

5. Contribution to Provincial Priorities and Cancer Action Plans

Strategic Initiative	Provincial Priority	Cancer Action Plan
1. Community oncology clinics	3. Closing the gap between demand and capacity	12. Increase capacity to meet projected volumes
2. Palliative care team models	1. Provincial standards and guidelines	2. Develop and use new cancer program standards
	2. Regional cancer services	5. Develop regional palliative care programs
3. Breast assessment & screening	3. Closing the gap between demand and capacity	7. Implement Cancer 2020: Screening
4. Rapid Access Diagnostic Units	4. Rapid access strategies	16. Fund two rapid access diagnostic units 18. Fund innovative process improvement projects
5. Patient portal 'My CARE'	4. Rapid access strategies	19. Fund innovative new technologies
6. Nurse practitioner follow-up	4. Rapid access strategies	17. Fund and support innovative health human resources
7. Oncology rehabilitation program	4. Rapid access strategies	18. Fund innovative process improvement projects

Eastern Ontario Region (Ottawa)

1. Regional Profile

Population

- 1.2 million people
- Projected increase of cancer incidents in Eastern Ontario Region is 11% (2001-2015)
- Projected increase in the number of consults and clinic visits for Eastern Ontario Region is 61.4 % (2001-2015)

Areas of Strength

- 20 hospitals in region in addition to Regional Cancer Centre
- Strong relationships between community and academic surgeons in region: 'Communities of Practice' to promote professional consultation, sharing, and learning
- 5 Community Clinics conducted throughout the Eastern Ontario Region
- Team based care – Patient Designated Nurse Model
- Liaison Nurse – manage inpatient consults to Oncology program.
- See program innovations below.

Areas for Improvement

- Wide variations in activity, duplications, gaps, uncoordinated cancer systems
- Ongoing capacity and demand gap continues to widen thereby impacting quality of care
- Lacks consistent quality and safety standards
- No organized system / network for knowledge transfer
- Patient information systems not integrated across the region
- The monitoring of performance and quality is not organized in a regional manner
- Need to maximize resources due to human resource shortages
- Prevention and early detection targets are not met
- Lack of co-ordination, integration and continuity of care making it difficult of cancer patients and families to navigate the system
- No structure / mechanism for regional collaboration among cancer providers across the cancer care continuum
- Shortage of medical, technical and allied health professionals
- No formal method of connecting and sharing expertise among professionals

Eastern Ontario Region (Ottawa)

2. Strategic Initiatives

Strategic Initiative	Description
1. Rapid Access Diagnostic Units	• Multidisciplinary Outpatient Diagnostic Cancer Assessment Units, including 3 units: colorectal; prostate; thoracic • Intended to augment primary care in region • Will provide one stop access to secondary & tertiary units • Provide educational opportunities for GPs & other healthcare providers • Develop central database to collect & consolidate patient data within region to facilitate meaningful research
2. Master plan for ORCC	• Expedite planned redevelopment
3. Communities of practice model & alternate funding for medical, surgical, radiation oncology	• Functional network to establish links between surgeons & partner organizations • Develop additional guidelines related to cancer surgery; identify & measure cancer surgery performance indicators • Fund 1,000 more cases to expand cancer surgery services • Foster communities of practice among surgical oncologists & community surgeons
4. Cancer biotherapeutics	• Platform technology for oncotropic viruses • Require lab & clinical research facilities (part of ORCC redevelopment) to support preclinical & early phase clinical studies • Industry partner, Wellstat Biologics Inc.

Eastern Ontario Region (Ottawa)

3. Current Programs/Innovations

Program / Innovation	Description
1. Physician Extenders	• GPO's provide support to patients in absence (or shortage or high volume clinics) of Oncologists
2. Disease Site specific Clinic Modules	• Clinics have been re-engineered as a team based care environment with clerical supports specific to disease site, resulting in improved MD and nursing efficiencies
3. Revised Referral process	• Referral process has been redesigned and includes a rapid re-referral process to expedite patient care
4. Development of information kits for referring physicians	• D/C guidelines and follow-up guidelines have been developed and mailed to referring physicians. Kits include rapid re-referral forms.
5. Implementation of Patient Designated Nurse (PDN)	• PDN model = nurse responsible for a caseload – key point of contact for patients, and their families.
6. 2 Advanced Practice Nurses	• Advanced practice nurses responsible for education, management of complex cases. Responsible for providing pain and symptom management and the promotion of expert oncology nursing.
7. Section 8 Drug Co-ordinator	• Introduction of a drug co-ordinator to liase with patients/ pharmaceutical companies, physicians and staff to facilitate and expedite Section 8 drug requisitions
8. Automation of Lab Results	• Automated downloading of lab results from MDS Labs and Dynacare directly to care team. Results care is seen directly by care team – PDN & responsible Physician. If either team member reviews results, colour changes on screen indicates the lab has been reviewed thereby communicating actions to either party.
9. CCO & ICES Study – Diagnostic Imaging	• A joint CCO & ICES study is underway to address standards for D.I specific to staging for different malignancies.
10. Lab Utilization	• A lab utilization program is now in place
11. Edmonton Symptom Assessment tool	• Implementation of the Edmonton Symptom Assessment tool is currently in use
12. 1 Nursing Professional Practice Co-ordinator	• Provides leadership in the advancement of oncology nursing knowledge, practice and research. Promotes excellence in practice, education and research across the integrated Cancer Centre. Actively participates in the development and selection of technologies that impact on the professional standards of the discipline.

Eastern Ontario Region (Ottawa)

Program / Innovation	Description
13. Patient Satisfaction Survey	• In collaboration with OHA, participating in the Patient Oncology Survey for the outpatient population. First results to be available November 12/05.
14. CTU Consolidation – General Site	• All CTU treatments have been consolidated to 1 site (General) to maximize on human resources, physical space and improvement in the overall service delivery to our cancer patients

4. Extent of Stakeholder Engagement

- Six expert panels comprised of 48 stakeholders representing the entire cancer care continuum established for each service area and essential supporting elements
- Public input through patient and family focus groups in 6 communities
- Public awareness/education through information to 43 community papers, radio & television interviews (4), and information and progress on Web site
- 230 people contributed to initiative – 17 hospitals/health care centres

5. Contribution to Provincial Priorities and Cancer Action Plans

Strategic Initiative	Provincial Priority	Cancer Action Plan
1. Rapid Access Diagnostic Units	4. Rapid access strategies	16. Fund two rapid access diagnostic units
2. Master plan for ORCC	3. Closing the gap between demand and capacity	10. Fund seven new capital projects
3. Communities of practice model & alternate funding for medical, surgical, radiation oncology	3. Closing the gap between demand and capacity	12. Increase capacity to meet projected volumes
4. Cancer biotherapeutics	6. Research networks	24. Co-ordinate cancer research

Northeastern Region (Sudbury)

1. Regional Profile

Population

- Population of 604,778 in large geographic area that averages out to 2.2 persons/sq km compared to provincial average of 12.6 persons/sq km
- Many communities along 3 highway corridors, with remaining area considered remote and isolated – some communities only accessible by air and minimal rail transportation
- 5% of provincial population and 30% of provincial land mass
- Low or negative population growth expected
- Large francophone (22%) and Aboriginal (10%) populations

Areas of Strength

- Approx. 40% of systemic treatment administered through 19 COCN sites and Algoma Regional Cancer Program, allowing patients to receive treatment as close to home as possible and developing strong partnerships.
- OBSP NE region has the highest screening rate in the province at 47%.
- Lodge adjacent to Cancer Centre well utilized; largest in the province
- NORTH Network telemedicine use steadily increasing; broadcasts of professional education sessions to other hospital sites

Northeastern Region (Sudbury)

Areas for improvement

- Determinants of health generally poorer
- Cancer incidence and mortality rates significantly higher
- Lower socio-economic status of population – barrier to access
- Lack of GPs and other specialists
- Shortages of medical, technical and allied health professionals
- No formal method of connecting and sharing expertise among professionals
- No mechanism for most oncology patients to access the resources at the two Regional Cancer Programs closer to home, other than systemic therapy services
- Inconsistent access to information and support during diagnostic phase outside the Sudbury Regional Breast Health Program
- Need for consistent system to measure and track diagnostic pathway
- Need for better access to support services and continuing care
- Gaps in accessing screening, receiving diagnostic services and surgery before patients and families enter more formalized cancer system

Northeastern Region (Sudbury)

2. Strategic Initiatives

Strategic Initiative	Description
1. Regional community outreach clinics & Algoma Regional Cancer Program	• Need for increased resources, for funding increased volumes at community outreach systemic therapy and peripheral clinics and for further developing and sustaining the Algoma Regional Cancer Program (ARCP)
2. Primary prevention & screening strategy	• Increase support for Northeast RPN-P&S, by expanding role of current prevention coordinator and adding new coordinators • Structure existing breast screening services to streamline all screen-eligible women to OBSP to increase OBSP participation rates • Expand role of OBSP nurse examiner, who delivers breast health promotion and clinical services – to serve as model for screening colorectal, cervical, targeted prostate, and skin (note: would assist with HHR problem in Northeastern Ontario)
3. Regional Human Resource Plan	• Address extreme shortages in northern Ontario • Capture benchmark data • Build on existing & develop new strategies
4. Strategic networks/navigators	• Use strategic network & navigator positions, connecting patients/providers to services across large areas of geography (instead of disease sites) - Surgical oncology network with 4 nurse navigators - Pain & symptom mgmt network for palliative care with 1 nurse navigator - Regional Aboriginal navigator, supported by Aboriginal District Advisory Committee • Develop info mgmt system for surgical oncology guidelines, communication, CME and research outcomes and evaluation

Northeastern Region (Sudbury)

Strategic Initiative	Description
5. Diagnostic networks/ Rapid Access Diagnostic Units	• Strengthen co-ordination of diagnostic service by establishing: - Diagnostics Council - Diagnostic Imaging Network - Medical Laboratory Network - pilot colorectal RADU (incl. FOBT) • Enhance existing Sudbury Regional Breast Health Program • Develop standard definitions for wait times & benchmarks
6. Regional oncology nurse practitioner service	• Enhance current program, to improve access to primary care & oncology services • Nurse practitioners to work in collaboration with multi-disciplinary teams, provide patient care, liaise with and provide consultation to community providers
7. Supportive care community specialist	• Coordinator to optimize use of existing supportive care resources; strengthen linkages to oncology community networks using technology; formalize professional & other relationships with regional agencies; provide learning opportunities to increase level of expertise of community outreach staff
8. Algoma Regional Cancer Centre (ARCC)	• Approval to construct Algoma Regional Cancer Program Centre, to be fully integrated into planned new Sault Area Hospital (hospital construction pending MOHLTC approval) • To include satellite radiation facility; provide majority of systemic therapy in area • Partner with NEORCC • Interim stop gap solution built & occupied in March 2003 with expectation that new facility will be built

Northeastern Region (Sudbury)

3. Current Programs/Innovations

Program / Innovation	Description
1. Centralized booking system / single access point for breast services	• Algoma model – Algoma district has highest OBSP screening participation rate (60%)
2. Northern Ontario School of Medicine	• Participation in training of family practitioners & shared teaching and learning & research opportunities. Assists with addressing HHR problems in NE ONT
3. Oncology Nurse Practitioners	• To assist with addressing HHR problem in NE ONT
4. Regional Provider Network for Prevention & Screening	• Coordinates activities & maximizes the impact of health promotion/risk reduction campaigns • Effective forum for sharing knowledge & best practices
5. Community Oncology Clinic Network	• Effective model for other communities

4. Extent of Stakeholder Engagement

- Task force of 8 members representing 7 stakeholders – 3 meetings
- Other consultations include:
  - 76 e-mail/telephone/teleconferencing with surgeons, other community health providers, the university and the medical school
  - 27 meetings including RCAC-NE, 5 District Advisory Committees and 4 hospital networks
  - A focus group with spouses of palliative patients, focus group with adult patients at the Lodge and a focus group with parents of pediatric patients
  - Two open forums with ICP staff, students and volunteers
  - 2 videoconferencing consultations; one with CCO and one with COCN sites
  - 9 hospitals/health centres

Northeastern Region (Sudbury)

5. Contribution to Provincial Priorities and Cancer Action Plans

Strategic Initiative	Provincial Priority	Cancer Action Plan
1. Regional community outreach clinics & Algoma Regional Cancer Program	3. Closing the gap between demand and capacity	10. Fund seven new capital projects
	3. Closing the gap between demand and capacity	12. Increase operating dollars to support increased volumes of surgery, systemic and radiation treatment to meet predicted demand projections
2. Primary prevention & screening strategy	3. Closing the gap between demand and capacity	6. Implement Cancer 2020: Prevention
	3. Closing the gap between demand and capacity	7. Implement Cancer 2020: Screening
	4. Rapid access strategies	17. Fund and support innovative health human resources
3. Regional Human Resources Plan	2. Regional cancer programs	4. Advance regional cancer programs
	4. Rapid access strategies	17. Fund and support innovative health human resources
4. Strategic networks/navigators - Aboriginal Navigator - Regional Pain and Symptom Clinic Navigator - Surgical Oncology Network	1. Provincial standards and guidelines	1. CCO will promote an evidence-based culture in the cancer care community and facilitate continuing professional development and the rapid incorporation of new knowledge into practice
	1. Provincial standards and guidelines	2. CCO will broaden the scope of program standards and guidelines across the continuum of care, addressing known needs and opportunities in cancer-related imaging, pathology and palliative care

Northeastern Region (Sudbury)

	2. Regional cancer programs	5. Develop regional palliative care services in collaboration with the Ministry End-of-Life Provincial Advisory Committee
	3. Closing the gap between demand and capacity	8. Implement components of the Aboriginal cancer strategy that will reduce preventable cancer rates
	4. Rapid access strategies	14. Develop and implement multi-year funding
	4. Rapid access strategies	17. Fund and support innovative health human resources
	4. Rapid access strategies	15. Understand, monitor and reduce waiting times
5. Diagnostic networks/Rapid Access Diagnostic Units	1. Provincial standards and guidelines	2. CCO will broaden the scope of program standards and guidelines across the continuum of care, addressing known needs and opportunities in cancer-related imaging, pathology and palliative care
	4. Rapid access strategies	16. Fund two rapid access diagnostic units
	5. Invest in performance measurement and accountability	21. Expand the scope and quality of data collected for performance monitoring and system planning
6. Regional oncology nurse practitioner service	4. Rapid access strategies	17. Fund and support innovative health human resources
7. Supportive care community specialist	1. Provincial standards and guidelines	1. CCO will promote an evidence-based culture in the cancer care community and facilitate continuing professional development and the rapid incorporation of new knowledge into practice

Northeastern Region (Sudbury)

8. Algoma Regional Cancer Centre (ARCC)	3. Closing the gap between demand and capacity	4. Advance regional cancer programs 17. Fund and support innovative health human resources 10. Fund seven new capital projects

Southwest Region (London)

1. Regional Profile

Population

- Approx. 1.1 million (2001), 28,800 sq kms – 8 cities with London the largest

Areas of Strength

- 40 hospitals, with 30 hospitals and organizations providing cancer services,109 long-term care facilities, 8 CCACs
- Recently established Cancer Service Networks will help improve access for supportive care services
- Use of VideoCare in patient care and education programming
- Implementation of Breast and Lung Care pathways

Areas for Improvement

- Shortage of medical oncologists in past 5 yrs
- More efficient access to diagnostic procedures, specialists and OR time
- Lack of co-ordination regional cancer system that promoted and delivered best practices care – lack of integrated care across continuum
- Shortage of health care human resources
- Lack of quality indicators to measure cancer service performance
- Need for more and better cancer data
- Lack of available and affordable patient transportation within and between counties
- Lack of resources for prevention and counselling
- Higher rate of risk factors than provincial averages
- No common patient information system
- Essex County population has poorer education, higher risk factors, higher rates of mortality and more health care needs unmet than provincial averages

Southwest Region (London)

2. Strategic Initiatives

Strategic Initiative	Description
1. Southwest Breast Cancer pathway (care initiative)	• Comprehensive clinical pathway from prevention or early detection of cancer through treatment to survivorship or palliation • Identifies navigators & navigation system as fundamental to successful pathway implementation • Promote breast screening for women 50+; permit effective use of diagnostic & treatment resources; track utilization & volume
2. Southwest Lung Cancer pathway	• Comprehensive clinical pathway from prevention or early detection of cancer through treatment to survivorship or palliation • Identifies navigators & navigation system as fundamental to successful pathway implementation • Based on Framework for Development created by Grey Bruce Health Network in 2002 for development of regional clinical pathways
3. Wait time database	• For suspicion of cancer to definitive surgical treatment • Will facilitate individual case mgmt; facilitate more effective understanding of diagnostic & surgical components of cancer system; permit analysis of resource utilization & assessment against London capacity & Southwestern Ontario capacity • To be built using Cerner Perioperative Transition Technology Project • To be linked with lung & breast cancer pathways (above); to be linked with other disease sites in yr 3
4. Palliative care	• Linkages to enable easier transitions for patients & families & providers, as they move across continuum • Working in partnership with stakeholders • Based on premise that need to coordinate & use services as efficiently as possible before gaps in service can be addressed • Identifies navigators & navigation system for palliative care as fundamental to success

Southwest Region (London)

Strategic Initiative	Description
5. Patient navigation	• Will leverage existing networks, professionals & organizations to improve access & co-ordination for patients needing palliative care • Navigators will support people living with cancer & their families throughout cancer care continuum, to enable continuity of services & support; will assist people in accessing services in more timely manner • Will support the work of GPs & healthcare providers by improving co-ordination among team members
6. Regional network	• Regional cancer services network that will address system issues & solutions that integrate the delivery of cancer services within communities • Networks can contribute to creating culture of shared accountability & create focus on outcomes

Southwest Region (London)

3. Current Programs/Innovations

Program / Innovation	Description
1. Electronic patient record (C3 project)	• C3 will link London hospitals by 2006 • Data collected across continuum of care, and available for review from single source – will allow for timely reporting that will help optimize resources & ultimately ensure timely access for patients • Longer-term vision to link multiple hospitals & MDs offices in Southwestern ON
2. CDI project	• PACS for digital imaging recording & report archival • Internet-based transmission of radiological images; facilitates sharing of radiological info among care providers • All hospitals in Thames Valley to be linked to same PACS by 2007, with all diagnostic facilities linked longer-term
3. Cerner Perioperative Technology Transition Project (Wait List Management for Perioperative Care project)	• To make a credible case for allocation of appropriate operating room resources, all elements of the pathway need to be understood and used to maximum efficiency while maintaining quality. Development of a surgical wait time database based on a range from highly suspicious for cancer to diagnosis through to surgical intervention will provide a source of information to determine the barriers to timely definitive surgical intervention and set a baseline for future evidence-based process improvements. • Surgical wait list to be implemented beginning November 2004, and completed by March 2005 • Currently underway for both St Joseph's Health Care & London Health Sciences Centre
4. Southwest Supportive Care Network	• Southwest Supportive Care Network is a regional structure that provides a forum for cancer service communication, planning and education. The network comprises Cancer Service Network chairs, palliative care representative, Canadian Cancer Society, Community Cancer Centre representative, and a representative from each of the provider networks • The local cancer service networks continue to work to build cancer care capacity closer to home

Southwest Region (London)

Program / Innovation	Description
5. Telephone Access Navigation Project for Aboriginal Communities	• Telephone navigation system to assist with prevention & screening information, and information, support & referral for people diagnosed with cancer
6. VideoCare	• Developed by SWOT-N (Southwestern Ontario Teleheath Network) • 40-site videoconferencing-based teleheath (TeleConsultation; TeleEducation)
7. Southwest Ontario Digital Imaging Network Project	• 8 hospitals part of Thames Valley Hospitals Partnership • MOHLTC & Canada Health Infoway provided $35 million to pilot
8. Population health framework to measure system performance	• Framework to assess, plan, & monitor regional cancer system, and measure system performance • Initial application of framework in assessing & planning where to focus initiatives in smoking prevention & breast screening programs

Southwest Region (London)

5. Extent of Stakeholder Engagement

- Task force of 13 members representing 9 stakeholders
- 16 focus groups comprising 6 local Cancer Service Networks and 8 teams representing specific areas of concern
- 9 hospitals/health care centres (others not identified through teams)

5. Contribution to Provincial Priorities and Cancer Action Plans

Strategic Initiative	Provincial Priority	Cancer Action Plan
1. Southwest Breast Cancer pathway (care initiative)	2. Regional cancer services	4. Advance regional cancer programs
	1. Provincial standards & guidelines	1. Develop and use new clinical guidelines
2. Southwest Lung Cancer pathway	2. Regional cancer services	4. Advance regional cancer programs
	1. Provincial standards & guidelines	1. Develop and use new clinical guidelines
3. Wait time database	4. Rapid access strategies	19. Fund innovative new technologies
4. Palliative care	1. Provincial standards & guidelines	2. Develop and use new cancer program standards
	2. Regional cancer services	5. Develop regional palliative care programs
5. Patient navigation	4. Rapid access strategies	17. Fund and support innovative health human resources
6. Regional network	2. Regional cancer services	4. Advance regional cancer programs

Southwest Region (Windsor-Essex)

1. Regional Profile

Population

- Primarily of European descent – 11% Essex County population of visible minority group
- Population generally has lower education than rest of province

Areas of Strengths

- Local access to cancer services – new cancer center and established informal community based palliative care program
- Effective use of WRCC e-chart for collaborative tool for sharing information. Excellent tool at point of care situations.
- Well established hospice (Hospice of Windsor & Essex County Inc.) working closely with cancer centre and other partners in regional cancer system

Areas for Improvement

- Wait times for diagnostics and treatments
- Unequal access to palliative services often requiring visit to the emergency room
- Need for support in helping patients and families communicate with providers in cancer system
- Variation in access to services throughout the region
- Lack of human resources, (e.g. advanced practice nurses, nurse extenders, and clinical pathologists)
- Lack of outcome data in region to facilitate system change
- Somewhat higher rates of mortality for the leading diseases, significantly shorter life expectancy & disability free existence; higher rates of hospitalization for leading category of illness; higher prevalence of obesity and somewhat higher rates of smoking

Southwest Region (Windsor-Essex)

2. Strategic Initiatives

Strategic Initiative	Description
1. Diagnostics	• Coordinated & organized access to cancer diagnostics • Facilitate & prioritize diagnostic imaging
2. Patient navigators	• Nurse navigator to assist patients & families through cancer system
3. Regional palliative care program	• Formalizing regional palliative care model, to coordinate & advise on regional palliative care needs • Involves identifying leader within expert community to coordinate & streamline inpatient & outpatient processes; hiring nurse practitioner as MD extender at hospitals where expertise lacking; infrastructure money to develop MD model for palliative care services • Transfer knowledge of Hospice Windsor to other areas
4. Nurse practitioners (physician extenders)	• Improve patient access to prevention & screening initiatives, including mobile prevention & screening teams
5. Radiation wait times	• Redesign process for radiation to reduce wait times, including setting treatment date at onset during booking process • Requires patient booking process
6. Wait times for expert pathological reports	• Address bottleneck in system, through innovative changes in HR, processes, technology to enable access to expert pathological opinion

Southwest Region (Windsor-Essex)

3. Current Programs/Innovations

Program / Innovation	Description
1. Palliative care	• Community palliative care program at Hospice of Windsor, providing 24/7 access to palliative care nurses that triage patients for palliative care MDs
2. Wound care experts	• Under development with local family physicians interested in palliative care
3. Brachytherapy program	• The Windsor Regional Cancer Centre was the first centre in Canada to have a dedicated prostate HDR Brachytherapy Program with state of the art technology • Brachytherapy is the delivery of radiation from a source positioned close to the tumour
4. Shared model of community & WRCC liaison nurse	• Communicates info between community nurse & MD
5. Breast assessment program	• Breast Health Centre established at Windsor Regional Hospital providing co-ordination of breast imaging services, on-site surgical consultation and client navigation, information and support services
6. Regional management of Cancer MRI	• Under development with local hospitals
7. Symptom response kits in home	• Provide range of medications in locked box for nurses & MDs to use to respond to pain & symptom mgmt in end-of-life situations
8. Home nurse pronouncement (palliative care)	• Nurse pronouncement of expected death in home for patients wishing to die in home setting (lead role taken by pain & symptom mgmt coordinator, and CCAC) • Coordinate with funeral directors association

Southwest Region (Windsor-Essex)

Program / Innovation	Description
9. E-chart	• Integrated cancer program electronic health record, shared by all providers • CCAC oncology case managers have access to WRCC e-chart
10. Advanced interventional radiology	• Available one site • Patients & nurses travel across the city and county for service
11. Palliative performance scale	• Tool that measures patient function
12. Care guides	• Pathways to promote standardized predictable care patterns for clients • Palliative care, tracheostomy, mastectomy, prostatectomy, COPD, cardiac developed
13. Will Call	• Patients who require medications to combat nausea & vomiting can call at any time and a nurse is available to provide medication

4. Extent of Stakeholder Engagement

- 2 regional task forces – 14 members representing 10 stakeholders
- 251 persons involved – as member of institution providing cancer services, member of an expert panel such as surgery, or as a participant in a focus group
- Consultation through survey
- 6 hospitals/health care centres

Southwest Region (Windsor-Essex)

5. Contribution to Provincial Priorities and Cancer Action Plans

Strategic Initiative	Provincial Priority	Cancer Action Plan
1. Diagnostics	4. Rapid access strategies	16. Fund two Rapid Access Diagnostic Units
		18. Fund innovative process improvement projects
2. Patient navigators	4. Rapid access strategies	17. Fund and support innovative health human resources
3. Regional palliative care program	1. Provincial standards & guidelines	2. Develop and use new cancer program standards
	2. Regional cancer services	5. Establish regional palliative care coordinators
4. Nurse practitioners (physician extenders)	4. Rapid access strategies	17. Fund and support innovative health human resources
5. Radiation wait times	4. Rapid access strategies	18. Fund innovative process improvement projects
6. Wait times for expert pathological reports	4. Rapid access strategies	19. Fund innovative new technologies

Northwestern Ontario (Thunder Bay)

1. Regional Profile

Population

- 250,000+ east-west borders 1,600 km
- Half the population lives in rural and remote areas – 58% of Ontario land mass with 2% population – yet provides 4% of provincial systemic & radiation activity
- 27% of population Aboriginal
- Thunder Bay, 13 communities (majority under 10,000), 40 Reserves (27 with air access only)
- Many cancer patients (living west of Thunder Bay) use the Winnipeg Health Sciences Centre for cancer surgery and diagnosis (due to a lack of timely access in Thunder Bay) and return to Thunder Bay for systemic and radiation treatment.

Areas of Strength

- Comprehensive cancer treatment program offering most of the sub-specialty cancer services offered in south – population no longer has to travel to Toronto, etc. for care unless sub-specialty services are required (i.e., pediatric oncology services, stem cell transplants, etc.)
- Access to systemic therapy and radiation within wait time standards as good as or better than most other Ontario regions (waits are directly attributable to a lack of capacity in surgery and diagnostics)
- Use of Telehealth Network, KO Aboriginal Telehealth Network, & other technological advances to help overcome distances

Northwestern Ontario (Thunder Bay)

Areas for Improvement

- Risk factor rates are higher and 5-year survival rates are lower than rest of province – highest cancer incidence
- Typically lung and colorectal cancers are diagnosed in later stages of the disease – lower survival rates (due to a lack of GPs, high smoking rates, poor diets, etc.)
- Need for improved access to care in rural and remote areas
- Need to improve access to screening, diagnostic imaging & specialists' services, especially in face of distances
- Lack of Aboriginal Cancer Control Unit, strategies & mechanisms to address particular needs, care & gaps in services for Aboriginal population
- Lack of seamless cancer system through continuum of care, especially in homecare & palliative care
- Widespread shortages in human resources
- 20% population have no GP

Northwestern Ontario (Thunder Bay)

2. Strategic Initiatives

Strategic Initiative	Description
1. Integrated cancer prevention program	• Integrate comprehensive health promotion planning, implementation, evaluation practices into day-to-day operations of program • Integrate the prevention and screening program with the Thunder Bay District Health Unit
2. Cancer screening & assessment	• Offer an organized colorectal cancer screening program • Expand breast & cervical screening activities • Facilitate early assessment of prostate cancer • Formal regional family practice cancer screening network
3. Diagnostic services	• Work with CCO to create provincial diagnostic imaging network dedicated to reading urgent cancer care reports • Add dedicated CT time at the NWORCC (using excess capacity on the CT simulator) • Add phlebotomy lab services • Add PIMS system (Kenora) • Work with CCO to generate workload standards & evidence-based guidelines for pathologists & radiologists • Collaborate with CCO, etc. to create cancer turn around & wait times for pathology & diagnostic procedures
4. Access for Aboriginal Communities	• Deliver regional & culturally appropriate health promotion & outreach, disease prevention/chronic disease management programs • Patient navigation services
5. Human Resources	• In-house regional recruitment & retention shop for practicing medical specialists. In addition to targeted and coordinated recruitment and retention of specialists, services also include monitoring and reporting on health human resources, and resolution of bottlenecks and access issues. • Opportunities to augment existing post-secondary clinical placements & training programs, and to increase awareness of careers in cancer care

Northwestern Ontario (Thunder Bay)

3. Current Programs/Innovations

Program / Innovation	Description
1. Telehealth oncology consultations, education initiatives & supportive care	• Telehealth Regional Oncology Clinics provide videoconferenced follow-up visits for patients with their oncologist; supportive care worker or dietician. Since June 2004 over 200 patients in the region have participated. • Regional clinics are offered throughout the year allowing the cancer program to expand services provided to regional patients. Physicians and counsellors continue to visit the region in person primarily for new patient visits. • A variety of educational sessions are video-conferenced throughout the region. Speakers bring local, national and international knowledge and expertise to our isolated area. It is estimated that more than 100 video-conferenced educational sessions will be scheduled this year. • Series of oncology education (prevention and awareness) sessions provided to First Nations health care professionals in remote communities via telehealth
2. Certified Oncology Nurse Education Pathway	• This pathway has been developed to assist local and regional oncologists and nurse to be care experts in their field. The goal is to transition all care providers from novice to expert status and ultimately enhance patient care.
3. Video conferencing rounds	• Oncology nursing rounds are held monthly as part of our ongoing regional oncology nurse education program
4. Meditech	• Meditech is currently being implemented throughout the northwest region as part of the goal of one regional electronic health record • Meditech EMR is used in the ambulatory cancer clinic to enhance the flow of patient information (especially lab results, notes and orders) throughout the health sciences centre • Through a Citrix solution, full Meditech and OPIS are available to physicians from remote locations
5. ADT interface between OPIS,Meditech and Multi-Access	• As a move to build a longitudinal patient record, interfaces between Meditech, OPIS and Multi-Acess have been implemented so that the patient need only be registered once (in the hospital system) and then the patient ID and demographics are carried forward to the other systems

Northwestern Ontario (Thunder Bay)

Program / Innovation	Description
6. WebOPIS	• A web-based version of OPIS is utilized in several areas throughout the hospital in Thunder Bay as well as hospitals and clinics throughout the region. This system provides care providers with much needed information about cancer patients during their follow-up care
7. Web access to PACS	• The Regional Teleradiology system and Web Access to PACS expedite the flow of images among the variety of widespread care facilities in Northwestern Ontario
8. Regional Oncology Program Education (ROPE) website	• For cancer care providers in 13 TBRHSC-RCC sites • All chemo partners share patient information, chemo orders, etc. behind protected firewall • MDs can access CCO/NWORCC guidelines & care maps
9. Digital archiving	• Digital archiving of inactive patient charts
10. Regional inventory of services website	• The regional inventory of services is a web-based listing of all supportive care services available to cancer patients and their families that contains pertinent information about the informational, emotional, social, spiritual, and practical services available throughout Northwestern Ontario. Professionals can also enter and print-off, for patients/clients, specifics about particular services, listed by organization, service, and/or community.
11. Physician extenders	• Nurse practitioner & GPO both on staff at RCC • Inpatient/outpatient oncology nurse manager, educator, clinical dietician, supportive care staff
12. Aboriginal Patient navigator	• Pilot position through March 31, 2005. Navigator is liaison between cancer patient and health care providers. Assists in coordinating travel, assistance with financial aspects of care, communicating and linking with other Aboriginal health care providers and provides supportive care to individuals who come to the cancer centre in Thunder Bay.
13. OBSP breast screening van	• This specially designed mobile screening coach visits 28 regional communities with nurse examiner and mammography technologist to provide clinical breast exam and mammogram

Northwestern Ontario (Thunder Bay)

Program / Innovation	Description
14. Dual function CT	• Pilot project now in place where all cancer patients under the care of an oncologist have access to a dedicated CT (in the cancer centre) scanner. Wait times for the CT (and TAT for the study) have been reduced by months (to days) for >1000 patients dating back to March of 2004. Pilot funding ceases (as does the program) in December 2004 if no new operating dollars ($200K per annum) are found.
15. Communities of practice	• Multidisciplinary teams in urology, breast, head & neck, thoracic
16. Cancer system networks	• Well-established cancer system networks linked back to RCAC (radiation, systemic, supportive care, prevention)
17. Joint preventive oncology initiative	• Between Health Unit & TBRHSC-RCC
18. Nicotine dependence centre	• No MOHLTC or CCO operating dollars are used for this initiative. We hope to link the operating needs of this program to the expansion in the preventive oncology area. More than 1000 smokers have quit (dating back to 2002) due to our program.
19. Aboriginal Cancer Care	• A variety of culturally appropriate cancer awareness tools have been developed
20. Supportive care action plan	• Comprehensive action plan to coordinate supportive care services in Northwestern Ontario, involving more than 40 agencies
21. Quality Checklists	• Electronic quality checklists have been implemented in radiation therapy to map out the task list associated with simulation requisitions from the point of origination of the request through to the transference of the needed information for treatment planning. Such clinical pathways help to track adherence and completion of procedures and many other types of quality assurance protocols. This new process has resulted in reduced turnaround times.
22. N.W.O Cancer Research Institute	• The Thunder Bay Regional Health Sciences Centre has entered into an agreement with Lakehead University and the Northern Ontario School of Medicine to develop a cancer research institute designed to grow the critical mass and profile of cancer researchers in Northwestern Ontario
23. Lymphedema management	• Recently received funding support to establish a lymphedema service for cancer patients in our region linked to supportive care and community resources

Northwestern Ontario (Thunder Bay)

Program / Innovation	Description
24. Preceptorship Resource Kit	• Currently piloting the RNAO developed program to ensure a comprehensive and quality training program for students and new staff of the in-patient oncology unit
25. Symptom Management	• Clinic provided weekly to assess, intervene and evaluate patient responses to plan of care including: symptom assessment, use of the ESAS tool to objectively evaluate symptoms, refer and link patients to supportive care or community resources, connects cancer patient to palliative care clinicians who specialize in symptom management in our community

6. Extent of Stakeholder Engagement

- Full-day retreat of 40+ stakeholders
- Task force of 15 members representing 11 regional stakeholders – 4 meetings
- Local secretariat met weekly (for 15 weeks) to develop the plan
- 43 separate consultation meetings with approximately 20 networks, groups, teams, including 3 patient/family forums
- Regional representation included more than 10 different regional hospitals and health care centres

Northwestern Ontario (Thunder Bay)

5. Contribution to Provincial Priorities and Cancer Action Plans

Strategic Initiative	Provincial Priority	Cancer Action Plan
1. Integrated cancer prevention program	3. Closing the gap between demand and capacity	6. Implement Cancer 2020: Prevention
2. Cancer screening & assessment	3. Closing the gap between demand and capacity	7. Implement Cancer 2020: Screening
3. Diagnostic services	4. Rapid access strategies	16. Fund two rapid access diagnostic units
4. Access for Aboriginal Communities	3. Closing the gap between demand and capacity	8. Implement the Aboriginal cancer strategy
5. Human Resources	2. Regional cancer services	4. Advance regional cancer programs

Appendix B: Ontario Cancer Plan: Rationale, Scope and Process

Cancer system integration underscored need for first provincial plan

As the principal advisor to the Ontario Minister of Health and Long-Term Care on all aspects of cancer control and services, Cancer Care Ontario's mandate includes cancer system planning. However, up until recently CCO's planning focus was limited to the provincial office and the regional cancer centers – roughly 30% of cancer expenditures. The integration of Ontario's cancer system, launched January 1, 2004 in part to correct for this legacy, underscored the need for coordinated planning across all cancer services. In the course of developing the associated Cancer Program Integration Agreements (CPIA), CCO, its partner hospitals and the Ministry recognized the need for a new, broader approach to cancer planning.

Cancer care delivery in Ontario has always been somewhat regionalized, with regional cancer centers providing all the radiation therapy and half the systemic therapy. The CPIA took this one step further by stipulating that, under the leadership of the Regional Vice-President (RVP) for Cancer Services, CCO and each ICP Hospital would share responsibility for the creation and support of regional cancer services across the care spectrum. Previously, the regional cancer centre had no official mandate or authority to drive changes within other organizations providing cancer care in the region. The CPIA also requires each individual ICP plan is aligned with a provincial plan for cancer services. Since no official provincial plan existed, the CPIA was instrumental in articulating the need for one. It was agreed that the planning process could be an effective vehicle and important catalyst for engaging regional players in a coordinated approach to cancer care delivery.

Clear strategic goals guided planning process

In preparation of its broader role and mandate, CCO set out to redefine its vision, mission and guiding principles in the fall of 2003. This included development of five strategic goals for the cancer system, with input from a broad spectrum of cancer system providers and managers from the soon-to-be ICPs and other partner organizations. These goals were confirmed at a CCO Retreat in November 2003. Defining and confirming these goals with system stakeholders prior to the planning initiative was, in hindsight, critical to its success.

Over the next 10 years, CCO and its partners would work together to achieve these system goals:

1. Improve access to cancer services and reduce wait times
2. Increase the use of evidence and innovation in decision making
3. Improve measurement, collection and reporting of cancer system performance
4. Increase the effective use of resources across the system
5. Reduce the burden of cancer

As the next section shows, the Ontario Cancer Plan was to answer the question, 'how can progress be made with respect to these five goals'?

Plan requirements: broad stakeholder engagement, large scope

In the fall 2003, the Ministry of Health and Long-term Care asked CCO to lead the development of a three-year provincial cancer plan encompassing the full range of cancer services (prevention, screening, diagnosis, treatment, supportive and end-of-life care).

With the intent of directly engaging a broad range of stakeholders throughout the process, the Ministry took the additional step of writing directly to every hospital CEO, CCAC, Public Health Unit and District Health Council in Ontario, outlining the nature of the plan CCO was to lead, and asking them to participate in the development of regional plans. This letter lent considerable credibility to the process, and made it easier for Regional VPs to bring other important players to the regional planning table.

The planning scope was very large. It was to:

- Address the full continuum of cancer care;
- Include all areas of the province (49 counties grouped into 11 planning regions);
- Encompass 154 Hospitals, 42 community care access centres, 37 Public Health Units and 16 District Heath Councils
- Engage volunteer agencies, including the Canadian Cancer Society and other community organizations

Through the planning process, the Ministry asked CCO to make specific recommendations for how existing resources (approximately $2 billion annually) could be used more effectively, specifying incremental resource requirements for each of the next three years, and how best to coordinate cancer services, both provincially and regionally. Where possible, recommendations were to include clear targets, timelines, action plans, as well as metrics for accountability to be attached in incremental resources. In addition, the plan was to specify mechanisms for ongoing assessment, monitoring and reporting to the Ministry on the organization and performance of the cancer system. The plan was to inform the Ministry's own business planning, as well as operational planning at the level of individual organizations.

The Approach

Guiding principles

The following points summarize the general approach used in developing the plan. As this was the first time a provincial cancer plan had ever been developed, the process was refined along the way.

The Ontario Cancer Plan:

- Builds on analysis and recommendations arising from previous cancer system reports (CSIC, Cancer 2020, CQCO, the Cancer IM Strategy and GTA 2014).

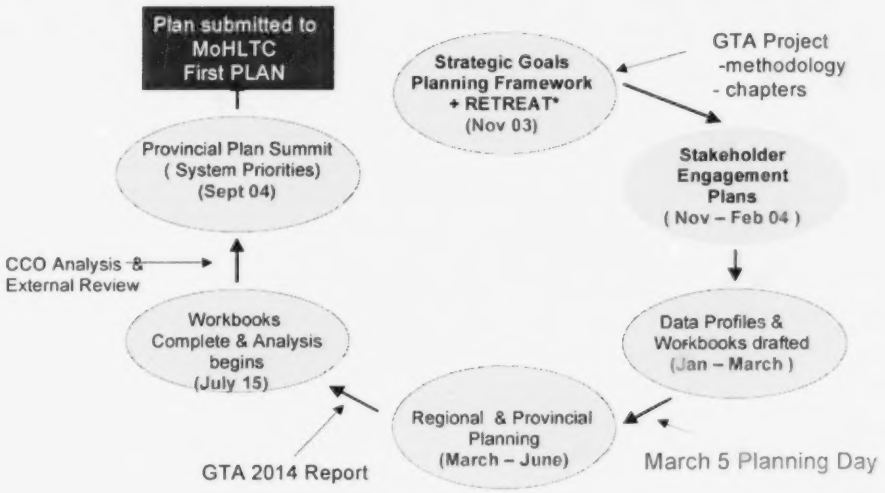
- Applies lessons learned from other jurisdictions. A detailed review of cancer plans from the U.K., New Zealand, Scotland, U.S. and British Columbia as well as the Canadian Strategy for Cancer Control was conducted. Summaries of some of these plans were provided as reference documents to regional planning teams.

- Uses a strong evidence base for analysis and recommendations. This was critical to the success of the plan. Data provided to regional planners allowed for a more impartial analysis of issues within each region and promoted a healthy appetite for more accurate and timely data in the future. Examples of statistical, activity and quality data inputs are presented later in this document.

- Balances provincial leadership and regional autonomy. Clear roles and responsibilities were defined at the outset. The planning process was open, transparent and iterative. Built into the process was regular structured feedback from stakeholders.

- Achieved major milestones under tight timelines (see Figure XX). The October deadline for submitting the Plan to government, and all other milestones were set early. While acknowledging the tight timelines and resulting limitations, the approach was to keep going and build lessons learned into the next planning cycle.

Figure 1: Short-Term Timelines ACHIEVED


Plan submitted to MoHLTC First PLAN
Provincial Plan Summit (System Priorities) (Sept 04)
CCO Analysis & External Review
Workbooks Complete & Analysis begins (July 15)
GTA 2014 Report
Regional & Provincial Planning (March – June)
March 5 Planning Day
Data Profiles & Workbooks drafted (Jan – March)
Stakeholder Engagement Plans (Nov – Feb 04)
Strategic Goals Planning Framework + RETREAT* (Nov 03)
GTA Project -methodology - chapters

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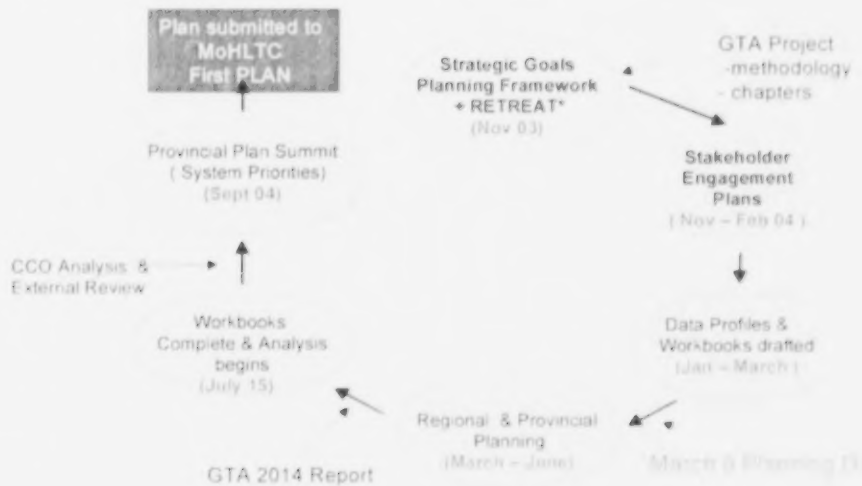
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Regular involvement of key stakeholders

As noted above, active engagement of stakeholders from across the system was an important feature of the planning process at both the regional and provincial levels. In addition, identifying clear roles and responsibilities between provincial and regional players was critical to balancing provincial leadership with regional autonomy.

Among the structures, roles and responsibilities established at the *regional* level were the following:

- Regions were defined by groups of counties. With assistance from the Ministry, regional profiles, including hospitals, CCACs, DHCs and PHU were identified for each region. Where there was discrepancy as to which county should be with which region, then RVPs worked together.
- RVPs were accountable to CCO for the development of regional plans for their respective planning areas.
- Regional Planning Task Forces were established with common terms of reference to guide the planning process. Membership was drawn from all sectors and included the regional director from MOHLTC and the chair of the Regional Cancer Advisory Committee.
- Each RVP developed and reported on their own approach to involving other regional stakeholders.

Regional Cancer Planning Task Forces' Terms of Reference

1. To oversee the process for the development of regional cancer plans
2. To review and interpret regional data profiles received from Cancer Care Ontario
3. To oversee the completion of regional planning workbooks with adequate input from partners and stakeholders
4. To foster effective communication with and buy-in from partners and stakeholders affected by the plan

Among the structures, roles and responsibilities established at the *provincial* level were the following:

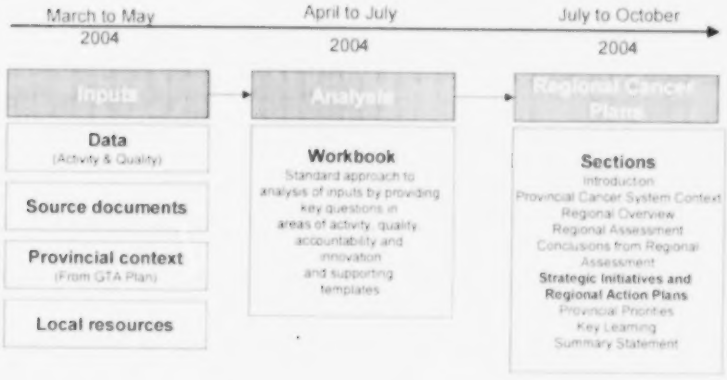
- The CCO Executive Lead for the Ontario Cancer Plan, supported by a small corporate planning team had responsibility to lead the overall process through to completion
- The Provincial Leadership Council and Clinical Council were forums for strategic discussions, feedback and problem solving throughout the process
- The CCO Cancer Prevention Forum provided an opportunity to engage key stakeholders and obtain feedback
- Meetings held regularly with various departments and levels of Ministry staff
- Other provincial organizations were briefed periodically, and invited to the Cancer Summit

Standard workbooks facilitated regional planning

The regional planning process took place within a very short time frame, but had to facilitate reliable and meaningful comparisons across the province. With input from planners and other stakeholders, planning workbooks were designed to guide the regional analyses and write-up of the final plans. Accompanying the workbooks were a variety of inputs focused on quality, accountability and innovation in the cancer delivery system, as detailed in the next section. Planners used the workbook templates to interpret these inputs, develop conclusions based on a comprehensive regional assessment, and identify up to five strategic priorities. For each priority, regional planners were required to complete an electronic template, specifying action plans and resource implications.

Figure 2 summarizes the major deliverables and activities of the regional planning process. Summaries of the regional plans are included in Appendix A.

Figure 2: Major Deliverables and Activities Leading to Development of 3 Year Regional Plans



Detailed regional profiles guided planning exercise

To facilitate planning, a CD of cancer activity and performance data was provided to each region, including:

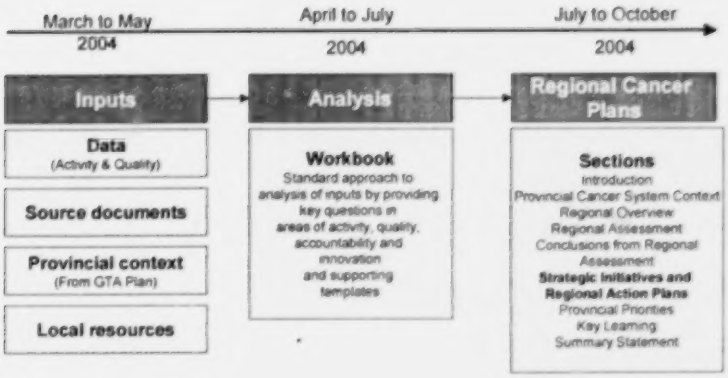
- Activity data: service volumes and utilization patterns for radiation therapy, systemic therapy, supportive care, in-patient and surgical activity
- Demographic and surveillance data: population, incidence and mortality by county and disease site. (Note: prevalence data was not made available later in the planning process)
- Quality indicator data (as detailed below)

This planning exercise was the first time that quality indicators were used by planning teams. Considerable thought was given to selecting a core set of indicators that would highlight important performance issues across regions. It was also hoped that the experience of using quality indicators for planning, would inform potential performance indicators for the CPIAs. See figure 3 below.

To select quality indicators for the plan, it was determined that they had to be:

- Evidence-based: They were selected from a list of 28 indicators developed by the Cancer Quality Council of Ontario through a modified Dephi panel process.
- Practical: Data had to be available at regional levels and not be dependent on original research requiring complex data linkages

Figure 2: Major Deliverables and Activities Leading to Development of 3 Year Regional Plans



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- Evidence-based: They were selected from a list of 28 indicators developed by the Cancer Quality Council of Ontario through a modified Dephi panel process.
- Practical: Data had to be available at regional levels and not be dependent on original research requiring complex data linkages

- Actionable: Progress should be able to be shown within the three-year planning horizon and beyond. In addition, indicators were to stimulate coordinated efforts and planning across multiple institutions within a region

- Balanced and system focused: Indicators needed to reflect the cancer care spectrum and contribute to achieving progress against the five cancer system goals

Figure 3: Cancer Plan quality indicators
Region-specific data provided where possible

Improve Measurement
Percentage of Staged Cases October 2003 At RCCs. (Excludes PMH)
Percentage of Pathology Reports Submitted to OCR in Synoptic
Report Format March 2001 by Laboratory Centres Participating in PIMs

Increase Use of Evidence
Estimated Lifetime Rate of Radiation Utilization, Cases Treated in the Year Ending June 1998 by County.
Radiation Utilization Rate within One Year of Diagnosis, Year Ending June1997, by County

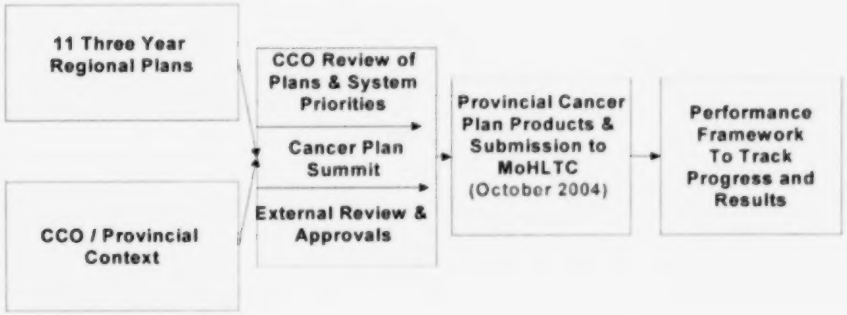
Access
OBSP Participation Rate by County; All Screening 1999-2001
Time from Abnormal Result to Diagnosis for OBSP Screened Patients 2002/02
Median Time from Consultation to Cancer Surgery, Ontario Patients 1993-2000
Median Time in Weeks from Referral to Start of Radiation Treatment – January 2004 by Centre
FOBT Rate 2001/02 by MOHLTC Planning Region

Outcomes
Percentage of Adults Smoking 2001/02 by PHU Area
Incidence, prevalence, mortality, survival

Provincial roll-up of regional plans: a three-month process

An analysis of provincial programs, a review of capital capacity requirements, and ongoing work with CCO's multi-year funding project helped inform the completion of the provincial roll-up of regional plans. This phase of the project was completed over a three-month period (see figure 4).

Figure 4: Major Deliverables and Activities Leading to Development of Provincial Plan


11 Three Year Regional Plans
CCO / Provincial Context
CCO Review of Plans & System Priorities
Cancer Plan Summit
External Review & Approvals
Provincial Cancer Plan Products & Submission to MoHLTC (October 2004)
Performance Framework To Track Progress and Results

Analysis and priority setting

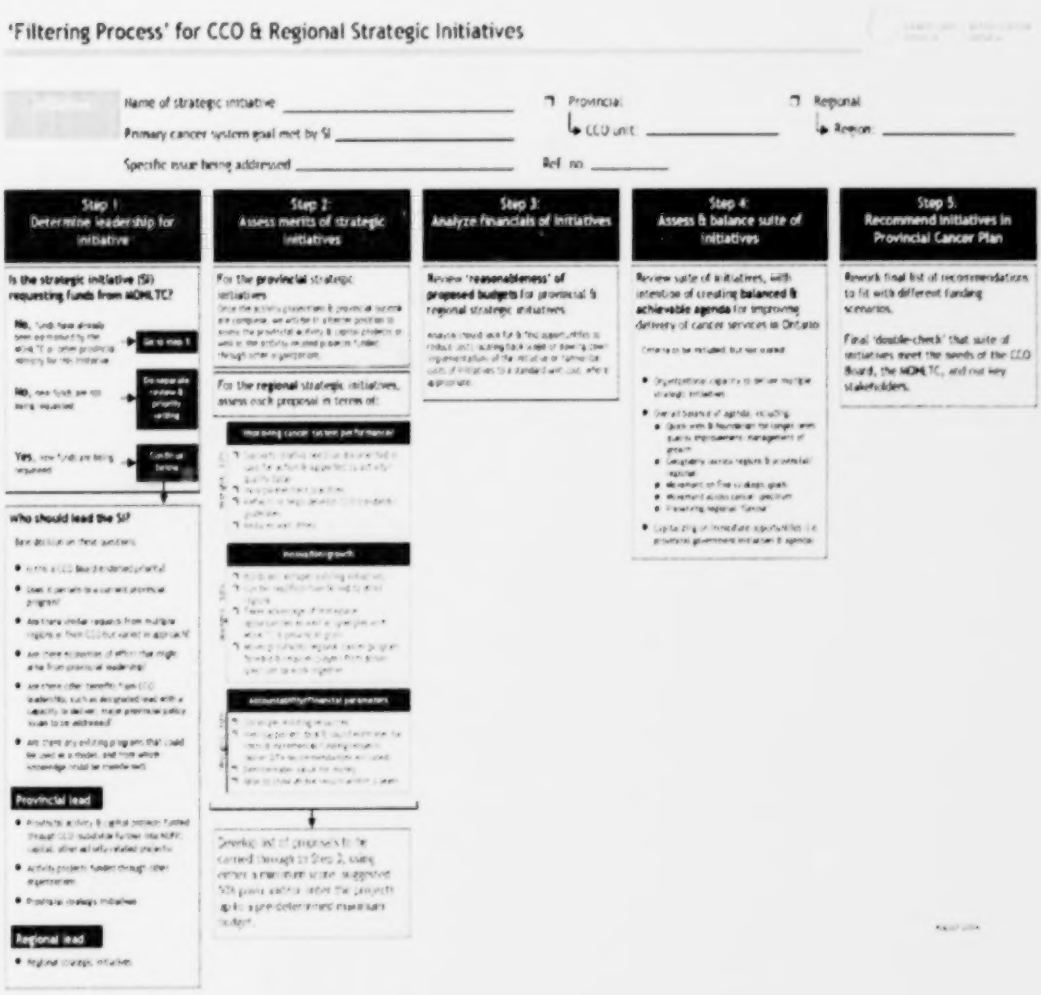
A significant amount of work was required to summarize the themes and issues arising from all the regional and provincial plan submissions. A planning database was developed to track this information, and to facilitate a common framework for reviewing each regional and provincial submission. Recommendations from GTA 2014 were incorporated into this review. In total, 250 recommendations for action were assessed.

It quickly became clear that the original intent of having 11 stand-alone regional plans was not appropriate. Many regions had identified similar initiatives; and there was an apparent gap between what regions wanted from the provincial programs and what provincial programs were putting forward in their own plans. Before setting priorities, there was a need for a coordinated approach across common initiatives, to reframe certain strategies, and to assess all financials put forth in the plans.

A filter was developed (see figure 5 below) to help categorize initiatives and facilitate a comprehensive financial analysis. For example, if a particular proposal passed a filter, the criteria for a subsequent filter might determine whether and how that initiative would have to be modified. It would have been impossible for CCO to simply function as a pass through for all initiatives from the field; some difficult decisions had to be made. A list of 24 initiatives was arranged into five themes. This consolidated set was

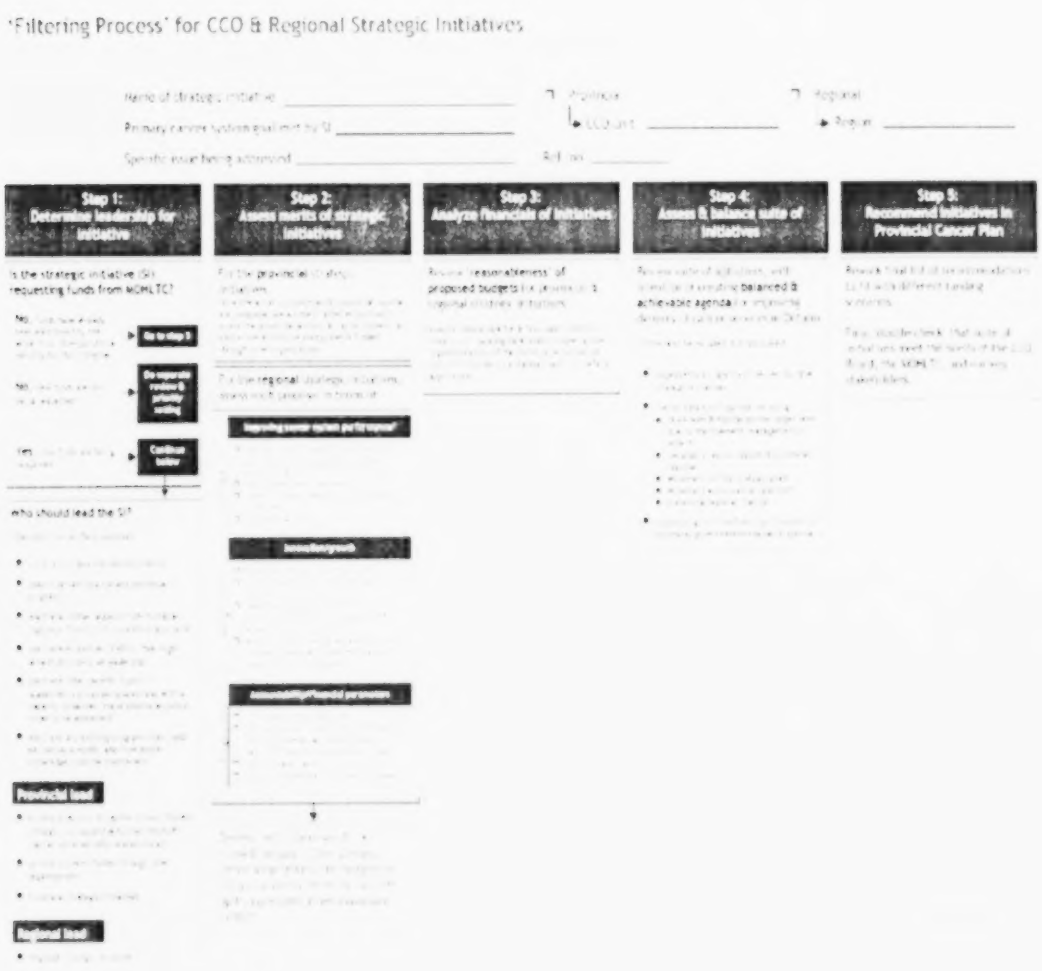
presented to key leaders of PLC and CC for review and discussion. There was consensus that the list was appropriate conditional on a number of refinements to better articulate some of the major concepts.

Figure 5: Strategic initiative filters


'Filtering Process' for CCO & Regional Strategic Initiatives
Name of strategic initiative
Primary cancer system goal met by SI
Specific issue being addressed
Provincial
CCO unit
Regional
Region
Ref. no
Step 1: Determine leadership for initiative
Is the strategic initiative (SI) requesting funds from MOHLTC?
No, funds have already been approved by the MOHLTC or other provincial ministry for this initiative
Go to step 3
No, new funds are not being requested
Do separate review & priority ranking
Yes, new funds are being requested
Confirm at below
Who should lead the SI?
Provincial lead
Regional lead
Step 2: Assess merits of strategic initiatives
For the provincial strategic initiatives
For the regional strategic initiatives, assess each proposal in terms of:
Improving cancer system performance
Managing growth
Accountability/financial parameters
Step 3: Analyze financials of initiatives
Review 'reasonableness' of proposed budgets for provincial & regional strategic initiatives
Step 4: Assess & balance suite of initiatives
Review suite of initiatives, with intention of creating balanced & achievable agenda for improving delivery of cancer services in Ontario
Step 5: Recommend initiatives in Provincial Cancer Plan
Rework final list of recommendations to fit with different funding scenarios.
Final 'double-check' that suite of initiatives meet the needs of the CCO Board, the MOHLTC, and our key stakeholders.

presented to key leaders of PLC and CC for review and discussion. There was consensus that the list was appropriate conditional on a number of refinements to better articulate some of the major concepts.

Figure 5: Strategic initiative filters



The Ontario Cancer Plan Summit

In September 2004, RVPs; hospital CEOs; representatives from provincial organizations, the Ministry; the RCAC Board Chairs; the CCO Board of Directors; CCO's Clinical Council; and CCO's Executive team gathered in Toronto for a one-day provincial cancer plan Summit.

In advance of the meeting, participants received an overview of the provincial Cancer Plan, including four discussion papers based on the key themes arising from the plan. At the Summit, a preview of the provincial plan was presented, and a distinguished panel of international experts offered their observations on and advice for Ontario. The expert panel included Dr. Ken Kizer, President & CEO of the US National Quality Forum; Dr. Mark Elwood, Director of Australia's National Cancer Control Initiative; and Dr. Frederick Greene, Chair Elect of the U.S. Commission on Cancer. During this session, participants also had an opportunity to ask the experts questions.

Following the expert panel, small groups were assigned to work on specific issues during breakout sessions to have an opportunity to provide structured feedback to the full group.

By the end of the day, the planning team had obtained significant input from key stakeholders, international experts, and policy makers.

Finalizing the plan

To complete the plan, there were six final steps in the process. The planning team:

1. Consolidated all of the feedback received at the Summit, including detailed comments from the international experts
2. Finalized the detailed financials for all aspects of the three-year plan
3. Wrote the final version of the entire plan
4. Conducted briefings of the plan with Ministry staff
5. Presented the final version to CCO's Board Committees
6. Developed a launch and communications plan

Conclusions

What is unique about the Ontario Cancer Plan?

- **Scope:** The plan was informed by the development of eleven regional plans as well as provincial level planning. It covers 49 counties in all areas of the Province, approximately 120 hospitals, with and without cancer centres; 42 Community Care Access Centres (CCACs); 16 District Health Councils (DHCs); and community members. Developing the Plan has been an inclusive process, through a coordinated regional and CCO planning process that engaged over 3,000 community partners and stakeholders.
- **Spectrum:** The entire cancer spectrum is addressed in this plan, from prevention, screening, diagnosis, treatment, supportive care, palliative and end-of-life care.
- **Use of evidence:** By building a cancer service profile for each region, there is now a more accurate understanding of the strengths and weaknesses of the current system. The regions systematically analyzed these profiles, which in turn, formed the evidential basis for all of the action plans put forward in the plan.
- **Transparency:** All regions received the full provincial view of cancer service and quality data.
- **Use of best practice:** The approach to the development of the cancer plan built on experience in other jurisdictions including U.S., U.K. and Australia.
- **Timing:** The Plan was completed in less than one year with the majority of activity compressed into a six-month timeframe.
- **Focused priorities and action plans:** Regional and provincial analyses defined the priorities for action. CCO put all recommendations through a filtering process, leading to a discrete set of priorities and action plans. As a result, a significant streamlining of recommendations arising from the planning exercise was conducted prior to Ministry consideration.
- **Alignment with broader health system changes:** The cancer plan was developed in a rapidly changing environment. The priorities and action plans anticipate and incorporate the Government of Ontario's transformation agenda, including the Local Health Integration Networks (LHINs), focused efforts to reduce wait times, as well as an ongoing need to demonstrate value for money in a tight fiscal environment.
- **Performance-oriented:** Cancer action plans have timelines, deliverables and measurable outcomes that can be monitored and are reported.

Summary of critical success factors

As noted above, the Ontario Cancer Plan is the first such plan developed. Looking back on the process, a number of critical success factors emerged. These included having:

Clear goals, a clear mandate and a compelling case for change. In Ontario, a compelling case for change included the government's concurrent provincial healthcare transformation agenda.

- Effective use of data to facilitate impartial analysis and planning
- Transparency of data inputs (across regions) throughout the entire process
- A well-structured and designed approach. This included the development of a standard regional planning workbook to facilitate reliable and appropriate comparisons and provincial assessment.
- Active engagement of a cross-section of stakeholders at regular intervals throughout the planning process
- Broad-based leadership at regional and provincial levels
- Commitment to meeting deadlines
- External review of plan

Limitations of the Plan

Though this plan is far-reaching in its scope and involvement of stakeholders, it is important to note its limitations:

- Cancer Care Ontario's mandate, and this Plan focus exclusively on adult cancers and care delivery. As a result, resources for pediatric cancers are not included in this plan.
- The short timeframe of this process prevented a detailed review of final versions. This will undoubtedly results in some errors or omissions. A concerted attempt will be made to correct all of these prior to the release of a public version
- Community activity not costed
- Service volumes included in this plan are preliminary
- As noted above, a host of inputs went into the development of plans at both the regional and provincial levels. It is difficult to capture all the relevant background in a single document.

In summary, this process, which included extensive and structured feedback from stakeholders, helped build support for its final recommendations. It would have been preferable to have additional time in the final phase for review by all stakeholders of the final version prior to release. Throughout the process, the planning team engaged in considerable dialogue with Ministry staff on several aspects of the plan from methodology to implementation to the final recommendations. It is vital to the success of this initiative that the Ministry provides funding based on the recommendations of this plan.

Appendix C: Financial Details

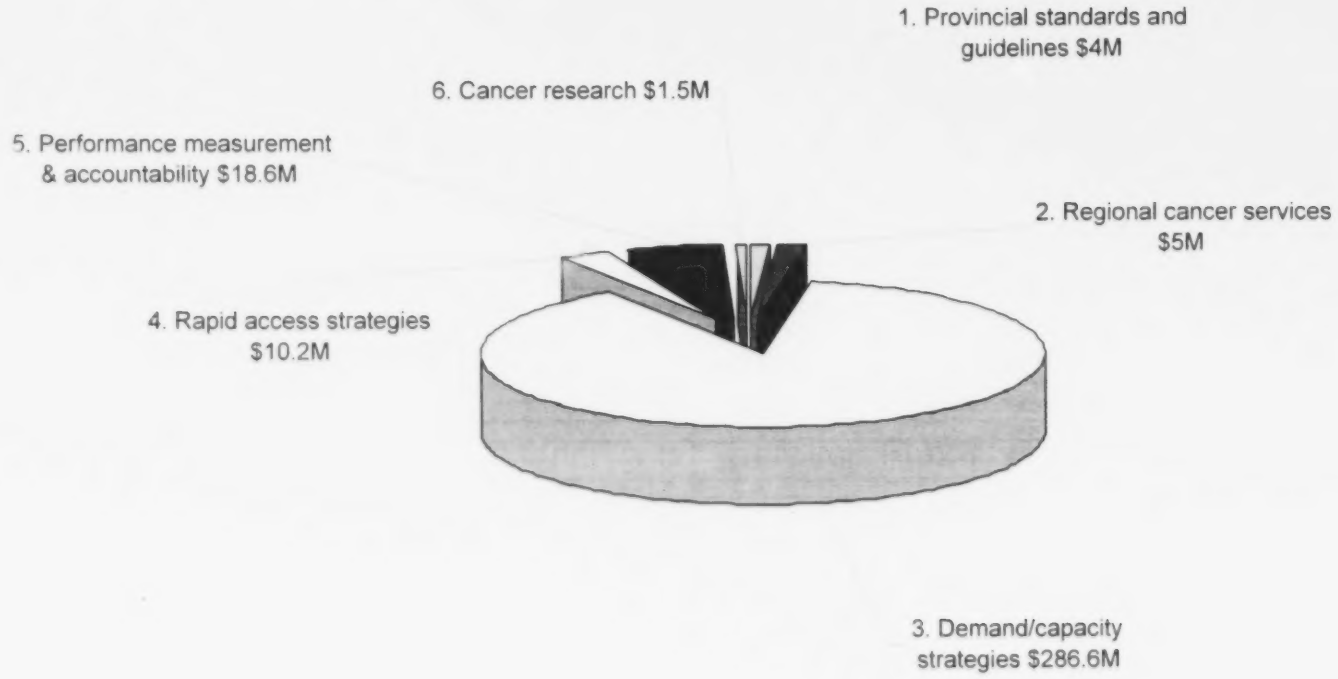
ONTARIO CANCER PLAN

SUMMARY OF 3 YEAR FUNDING REQUEST

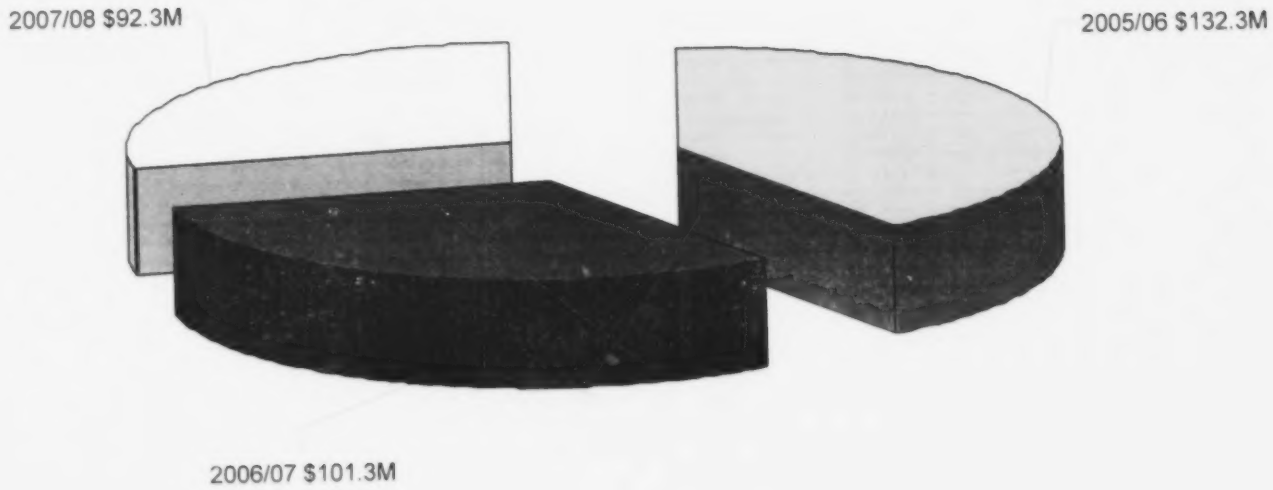
($ 000's)

Priorities for Action	2005/06	2006/07	2007/08	Total Incremental Funds Requested	Refer to Cancer Plan
INCREMENTAL YEAR OVER YEAR BASE OPERATING FUNDS REQUESTED					
1 Provincial standards and guidelines	1,800	1,700	500	4,000	*Pgs 45 - 56*
2 Regional cancer programs	5,000	-	-	5,000	*Pgs 57 - 63*
3 Demand/capacity strategies	111,730	88,525	86,300	286,555	*Pgs 64 - 97*
4 Rapid access strategies	5,735	2,128	351	8,214	*Pgs 98 - 108*
5 Performance measurement & accountability	400	120	-	520	*Pgs 109 - 119*
6 Cancer research	1,500	-	-	1,500	*Pgs 120 - 123*
Total Incremental Base MOHLTC Funding for the Year	126,165	92,473	87,151	305,789	
ONE TIME OPERATING FUNDS REQUESTED					
4 Rapid access strategies	1,000	1,000	-	2,000	*Pgs 102 - 102*
5 Performance measurement & accountability	5,123	7,831	5,115	18,069	*Pgs 115 - 118*
Total One Time Operating Funds Requested from MOHLTC	6,123	8,831	5,115	20,069	
CAPITAL FUNDS REQUESTED					
3 Demand/capacity strategies	55,000	105,500	115,000	275,500	*Pgs 80 - 86*

Incremental Base and One Time Operating Funds 2005 - 2008 by Cancer Plan Priority


1. Provincial standards and guidelines $4M
6. Cancer research $1.5M
5. Performance measurement & accountability $18.6M
2. Regional cancer services $5M
4. Rapid access strategies $10.2M
3. Demand/capacity strategies $286.6M

Incremental Base and One Time Operating Funds by Year 2005 - 2008



Incremental Base Operating Funds Priority #3 Demand/Capacity Strategies - *A Closer Look*

ONTARIO CANCER PLAN

PRIORITY #3

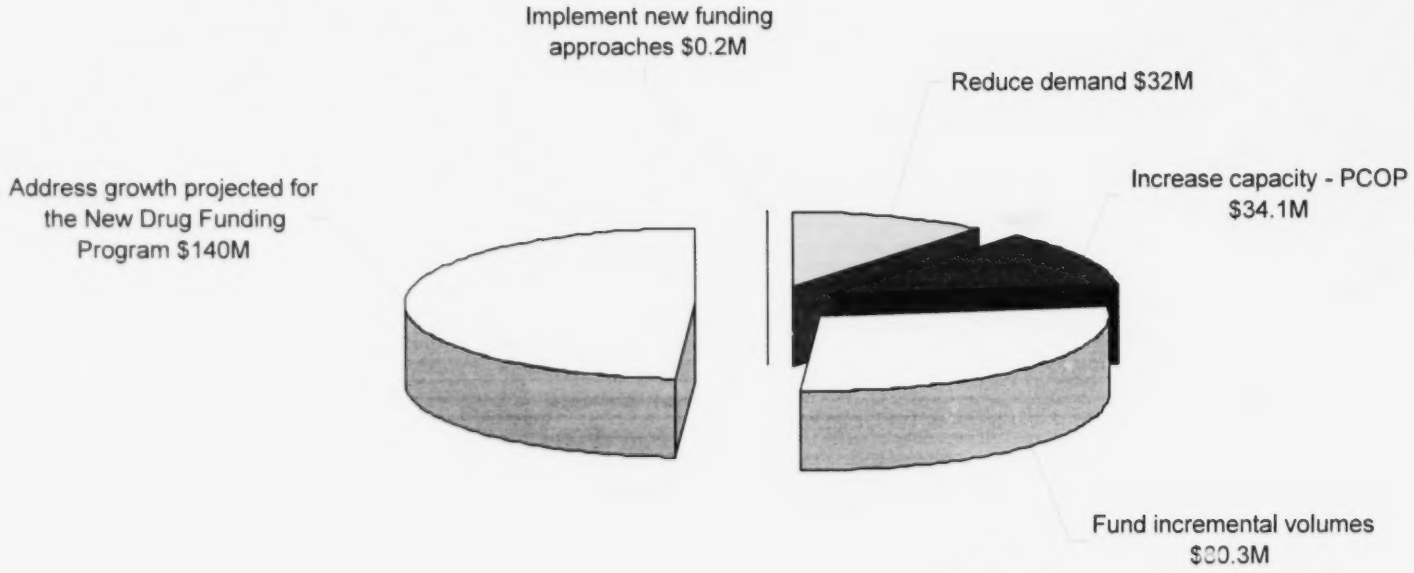
Demand/capacity strategies

3 YEAR BASE FUNDING REQUEST
INCREMENTAL YEAR OVER YEAR BASE OPERATING FUNDS

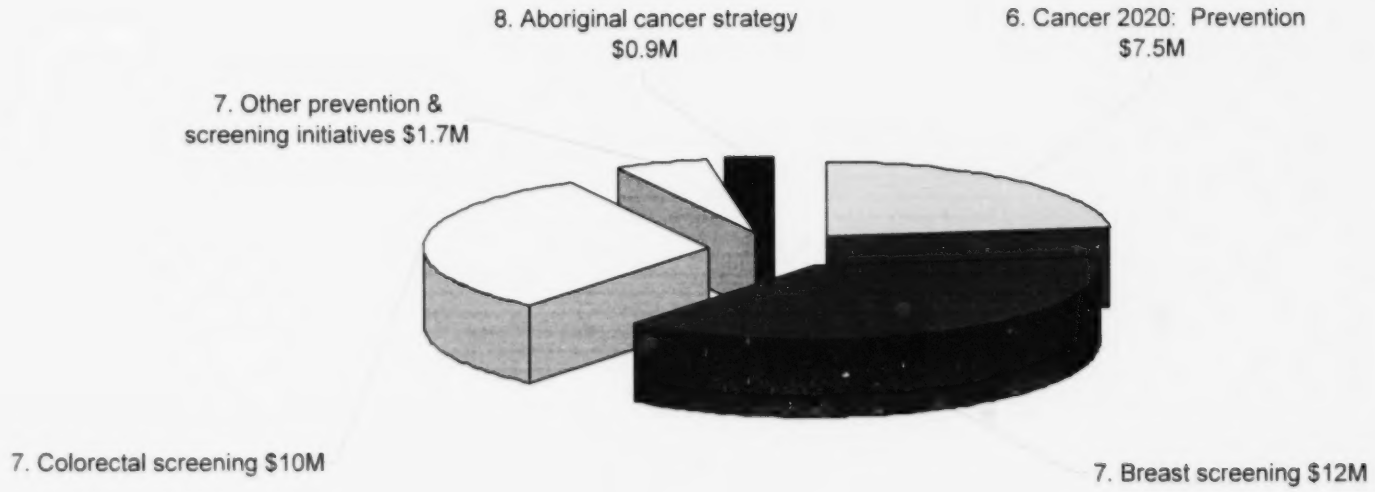
($ 000's)

Action Plan	2005/06	2006/07	2007/08	Total Incremental Funds Requested
A Reduce demand				
6 Cancer 2020: Prevention (refer to Plan document page # 70)	3,050	1,640	2,780	7,470
7 Cancer 2020: Screening (refer to Plan document page # 71)	4,230	5,920	13,520	23,670
8 Aboriginal cancer strategy (refer to Plan document page # 72)	800	65	-	865
B Increase capacity - PCOP				
9 a) PCOP's for 5 cancer centres (refer to Plan document page # 77)	15,400	5,200	2,600	23,200
b) PCOP's for 3 cancer centres (refer to Plan document page # 77)	-	-	10,900	10,900
Fund incremental volumes				
12 Capacity to meet projected volumes (refer to Plan document page # 87)				
a) Cancer surgery - growth of incidence	10,900	11,600	12,000	34,500
b) Systemic therapy	9,462	6,734	7,037	23,233
c) Radiation treatment	7,688	7,366	7,463	22,517
Address growth projected for the New Drug Funding Program				
13 Anti-cancer drugs (refer to Plan document page # 92)	60,000	50,000	30,000	140,000
Implement new funding approaches				
14 New approaches to funding cancer services: MYF & AFP (refer to Plan document page # 95)	200	-	-	200
Total Incremental Base MOHLTC Funding for the Year	111,730	88,525	86,300	286,555

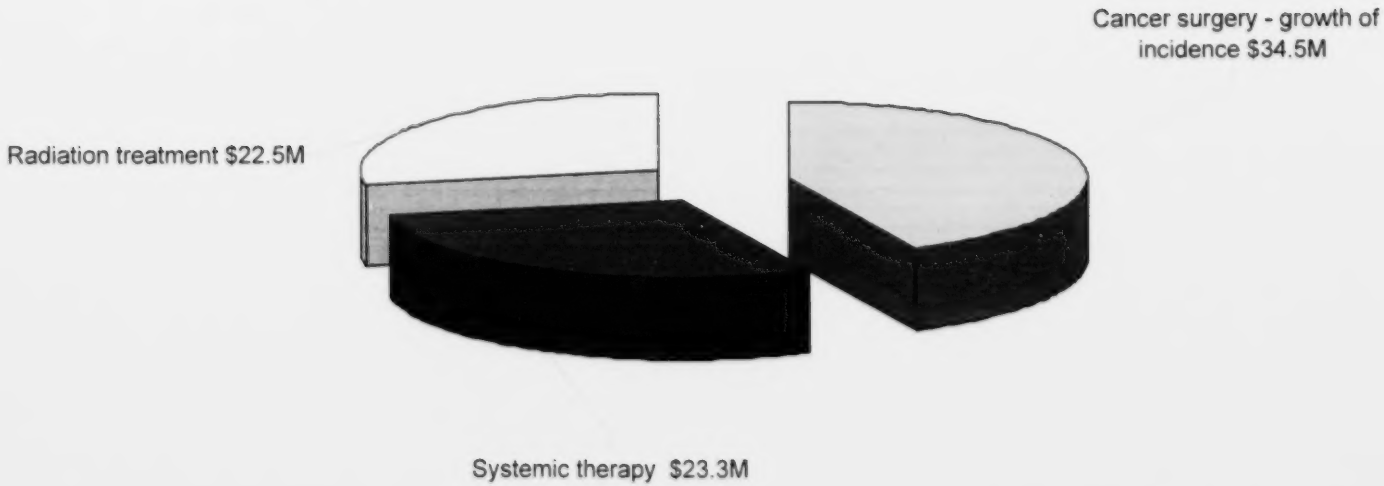
Incremental Base Operating Funds 2005 - 2008 for Priority #3
Demand/capacity strategies


Implement new funding approaches $0.2M
Reduce demand $32M
Address growth projected for the New Drug Funding Program $140M
Increase capacity - PCOP $34.1M
Fund incremental volumes $80.3M

Incremental Base Operating Funds 2005 - 2008 for Priority #3
Demand/capacity strategies
Reduce demand

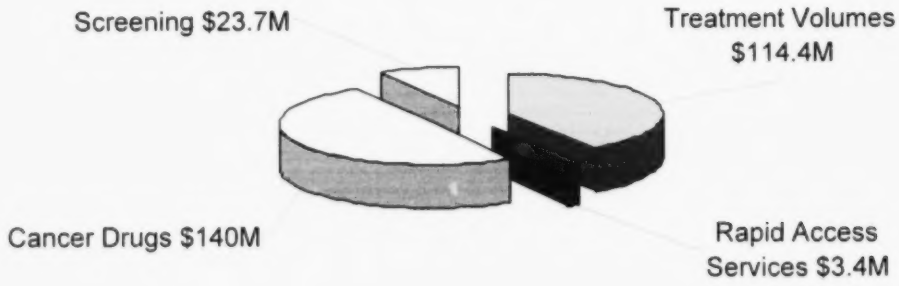


Incremental Base Operating Funds 2005 - 2008 for Priority #3
Demand/capacity strategies
Increase capacity
Fund incremental volumes

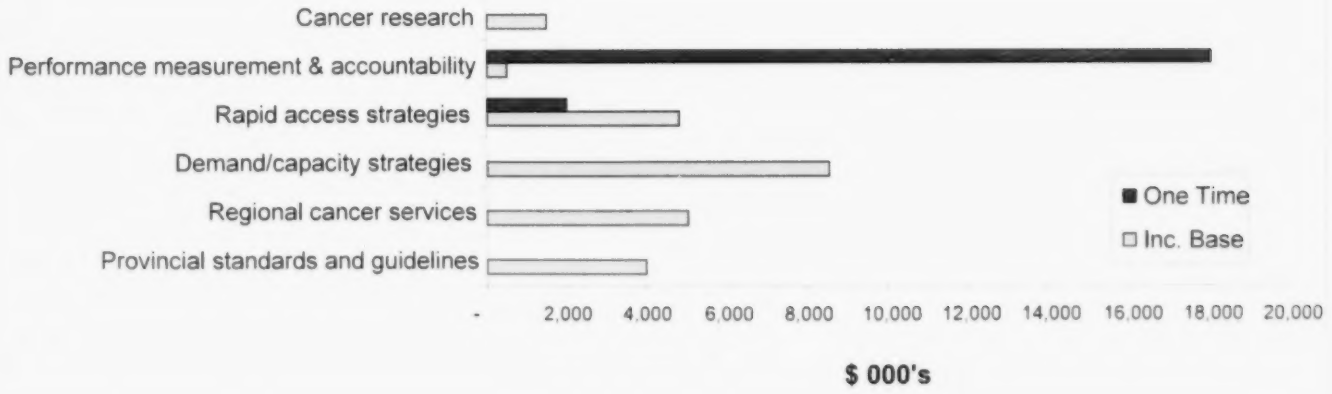


Plan by Investment Type: Volume and Transformational

Cancer Plan Volume Investments 2005 - 2008
Incremental base operating funds

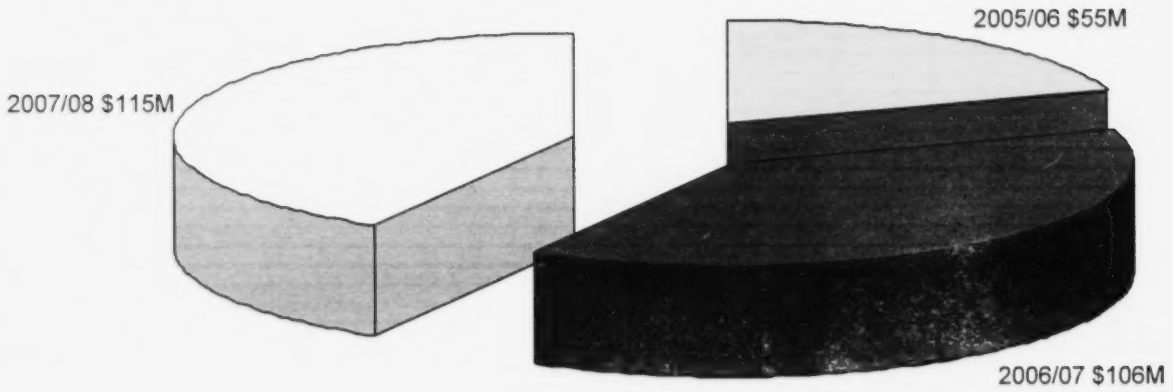


Cancer Plan Transformational Investments 2005 - 2008
Incremental base operating funds and one time funds



Capital Funds

Total 3 Year Capital Request by Year 2005 - 2008



Capital Initiatives *($000's)*	**2005/06 Funding Request**	**2006/07 Funding Request**	**2007/08 Funding Request**	**Total Funding Request**
Seven (7) new capital projects (refer to Plan document page # 80)				
Ottawa expansion project	6,000	26,000	18,000	50,000
Kingston re-development project	11,000	16,000	8,000	35,000
North of Toronto 1 development project	12,000	25,000	17,000	54,000
North of Toronto 2 development project	-	12,000	25,000	37,000
Niagara development project	6,000	12,000	20,000	38,000
Development of Radiation Services for Sudbury/Algoma			3,000	3,000
Expansion of Peel Cancer Services - Planning Grant	-	-	3,000	3,000
Subtotal	**35,000**	**91,000**	**94,000**	**220,000**
Radiation equipment (refer to Plan document page # 83)				
Secure Funding for Additional Treatment Capacity for Peel (3 units)	10,000			10,000
Secure Funding for Additional Treatment Capacity for Grand River (1 unit)		4,500		4,500
Secure Funding for Additional Treatment Capacity for Durham (3 units)			11,000	11,000
Radiation Equipment Replacement and Upgrades	10,000	10,000	10,000	30,000
Subtotal	**20,000**	**14,500**	**21,000**	**55,500**
Total Capital Initiatives	**55,000**	**105,500**	**115,000**	**275,500**

Appendix D: Methodology

1. Estimating the Current and Future Incidence, Relative Survival, Prevalence and Mortality for Cancer in Ontario
2. Projecting Surgical Volumes
3. Figure 10: Ontario 2004/2005 estimated expenditures on cancer care

1. Estimating the Current and Future Incidence, Relative Survival, Prevalence and Mortality for Cancer in Ontario

Estimating and Projecting Cancer Incidence

Introduction:

Observed OCR cancer incidence rates were modelled using age-period-cohort models (APC)(Clayton and Shifflers, 1987). Projection of these modelled incidence rates to the years following the observation period (post-2001) were undertaken, assuming the persistence of both age and cohort effects into the future. Persistence of period effects, unfortunately, is less certain, but these have, nonetheless, been retained in the models. The projected estimates of cancer incidence rates were then applied to available population forecasts (Ontario Ministry of Finance, 2002) to obtain projected estimates of incident case frequencies.

While it is common for APC models to fit observed data quite well, it is unlikely that forecasts will closely approximate future frequencies of incident cases, since all factors influencing risk cannot be measured. Because no single statistical model best projects future risk, we derived "best estimates" by computing the average of projected frequencies from five statistical approaches. There is some empiric evidence from ex post testing that this approach produces the best projections, at least over the short term (New Zealand, 2002).

Statistical models capture uncertainty. The intra-model uncertainty typically yields bounds that increase substantially as one attempts to forecast further into the future. Estimates 10-15 years from the end of the observation period are much less certain than estimates 4-6 years after the baseline.

It should be noted that population estimates, both from the past, and forecast into the future, also introduce uncertainty in the estimates. Population estimates are often assumed to be fixed and without error. However, errors, or changes, in migration patterns, or birth and death rates, may lead to estimates that are quite imprecise. While population projections often consider different population scenarios (e.g. varying migration rates or birth rates or death rates), these effects have not been incorporated into the models we have developed. It should be noted that, by late 2004, new population forecasts will be available for Ontario and its Census Divisions. These new estimates will be incorporated with our future methodology.

We have attempted to describe uncertainty through the use of bounds determined by the minimum and maximum values derived from the five modelling approaches (described below). These bounds reflect inter-model uncertainty - this uncertainty is likely smaller than intra-model uncertainty, however.

Assumptions:

Statistical forecasting methods typically rely on historical experience to estimate future trends. There is some empiric evidence that this method of forecasting is superior to simply assuming a static situation, i.e. persistence of recent estimates into the future (Moller et al, 2002). It is generally assumed that forecasting future cancer incidence (i.e. risk) can be adequately undertaken, given various measurable factors of the past. These factors most typically are: age at diagnosis, period (or year) of diagnosis and birth cohort. All these factors are assumed to be surrogates for underlying risk factors.

It should be noted that statistical methods may be quite insensitive to very recent changes in underlying risks or determinants; for example, the introduction of new screening tests and diagnostic practices (i.e. period effects). Additionally, without a long, and large, series of historical estimates, the parameter estimates for age and period of diagnosis may be quite imprecise.

Data:

Estimates of new cases of cancer utilized the following data:

1. The number of incident cases by five-year age group (0-4,.....85+ yrs), by five-year period of diagnosis (1982-1986, 1987-1991, 1992-1996 and 1997-2001), by Census Division at diagnosis and by cancer site. These data were extracted from the Ontario Cancer Registry in April 2004. The site groups selected are shown in Table 1.

Table 1: Site groups for incidence

SITE	ICD-9	SEX
Prostate	185	Male
Breast	174	Female
Lung	162	Male, Female
Colorectal	153, 154	Male, Female
All Other Sites	140-208, excluding those codes above	Male, Female

Because of incompleteness in information describing residence at diagnosis, observed counts were considered only over the period 1982 to 2001. Regional groupings are described in Table 2 (Marc to update table to put in current groupings - 11) Finally, birth cohorts were defined as a linear function of age group and period of diagnosis.

Table 2: Region groups for projections

Planning Regions	Counties
Central East	Haliburton, York Regional Municipality, Northumberland, Durham Regional Municipality, Peterborough, Simcoe, Kawartha Lakes
Central South	Haldimand and Norfolk, Niagara Regional Municipality, Hamilton, Brant
Central West-Peel	Halton Regional Municipality, Peel Regional Municipality
Central West-Kitchener	Wellington, Waterloo Regional Municipality, Dufferin
East-Kingston	Frontenac, Lennox and Addington, Hastings, Prince Edward
East-Ottawa	Leeds and Grenville, Prescott and Russell, Lanark, Renfrew, Ottawa, Stormont, Dundas and Glengarry
North-East	Muskoka District Municipality, Sudbury District, Sudbury Region, Parry Sound District, Cochrane District, Nipissing District, Algoma District, Manitoulin District, Timiskaming District
North-West	Rainy River District, Kenora District, Thunder Bay District
South-West London	Elgin, Perth, Middlesex, Oxford, Huron, Bruce, Grey
South West-Windsor	Essex, Lambton, Chatham-Kent
Toronto	Toronto

2. Size of the resident population of Ontario, and its Census Divisions, by sex and single year of age (up to 90+ yrs), estimated on July 1st for the years 1971 - 1999 (Statistics Canada) and forecast over the years 1999 to 2028 (Ontario Ministry of Finance, 2002).

Methodology:

Various age-period-cohort regression analyses of incidence data were performed. Site, sex and regions were also modelled independently. All models applied age, period and cohort effects as independent factors and were always fit to a full model. Five statistical approaches were used for the projections. Each is an APC variant relying only on age, period and cohort effects. They are all generalized linear models, but vary in the methods of estimation and forecasting. They can be summarized as follows:

1. **Traditional APC model** (Clayton and Shifflers, 1987) - incidence probability is assumed to be a function of age, period of diagnosis and birth cohort through a log link function. The logarithm of the appropriate population count is an offset term. Observed cancer incidence counts are assumed to be random variables following the Poisson distribution. Traditionally, the maximum-likelihood estimate of the parameter vector can be obtained by maximizing the log-linear equation, using standard techniques.

2. **Bayesian APC model** (Knorr-Held and Reiner, 2001) - in this approach, age, period and cohort effects are smoothed with an auto-regressive prior distribution. Cancer incidence is modelled with a logit link function in relation to the age, period and cohort parameters. The count of incident cases is assumed to be a random variable following the Binomial distribution. Freely available software was used for this modelling (BAMP, 2004).

3. **Modern APC models** (Moller et al, 2002) - this approach extends the traditional APC modelling to permit fitting with a power-linked function. Additionally, tapering (or dampening) of future risk was introduced. Three scenarios of dampening were considered: none, mild, and full. These models were fit using software developed by the Nordic countries (NordPred, 2004).

Each of the above five approaches was run and the "best estimate" was calculated as the arithmetic mean of the five model results. Bounds for the estimated counts were calculated as the minimum and maximum of the estimates produced from the five models.

Incorporation of Incidence Estimates in PIAMOD software

The Prevalence and Incidence Analysis MODelling (PIAMOD) software, from the Italian Institute of Public Health (Verdecchia, 2004), was used to estimate complete and limited-duration prevalence in Ontario, as well as medium-term projections of prevalence and cancer mortality. It permits consistent estimation and projection of prevalence and mortality through the use of individual incidence and patient follow-up data. This methodology has been adapted from an older formulation, called MIAMOD, which has previously been used in Europe to estimate cancer incidence and prevalence (Verdecchia et al, 1989; De Angelis et al, 1994). More recently, the formulation for PIAMOD has been described in detail, along with some empiric evidence for validation (Verdecchia et al, 2002). In the PIAMOD input tables, population projections and cancer incidence, by single year of age (up to 90+) and individual calendar years were entered for the years 1971 to 2014 inclusive. For incidence, these estimates were derived from the APC methodology described above.

In order for these estimates to be integrated with those for relative survival (see below), a polynomial model of the incidence rates must be fit to these estimates, through a log link function of age, year of diagnosis and birth cohort:

$$\phi(\mu_{it}) = \text{const} + \sum_{k=1}^{k_1} a_k i^k + \sum_{k=1}^{k_2} b_k t^k + \sum_{k=1}^{k_3} c_k (t - i)^k$$

where ϕ is the log link function and μ_{it} is the probability (risk) of being diagnosed with cancer during age i and time t. θ is a vector of the parameters to be estimated (i.e. constant, a_1, ..., a_{k1}; b_1, ..., b_{k2}; c_1, ..., c_{k3}).

The degree of the polynomial terms (k_1, k_2 and k_3) has to be chosen to give the best fit for the observed cancer incidence counts (m_{it}). The observed cancer incidence count (m_{it}) is assumed to be a random

$$E(m_{it}) = \mu_{it} P_{it}$$

variable following the Poisson distribution, with the expected value of:
where P_{it} represents age and time-specific population counts. The likelihood function is expressed as:

$$\log L(\theta) = \sum [m_{it} \log [P_{it} \hat{\mu}_{it}(\theta)] \quad P_{it} \hat{\mu}_{it}(\theta)]$$

The maximum-likelihood estimate of the parameter vector θ can be obtained by maximizing the above equation, using standard techniques. The degree of the polynomial terms, k_1, k_2 and k_3, is identified through a stepwise procedure based on likelihood ratio statistics (Verdecchia et al, 1989).

Estimating and Projecting Relative Survival

Relative survival is defined as the ratio of the survival probability observed in a group of cancer patients and that expected in an identically structured group of healthy people with respect to the underlying risk of dying from any cause. Essentially, relative survival is an estimate of the net death hazard from a specific type of cancer. Actual relative survival rates were estimated from survival data of patients registered in the Ontario Cancer Registry between 1971 and 2001. Using the software known as SEER*Stat (NCI, 2004), the analysis included only primary tumours and excluded Death Certificate Only (DCO) cases. Relative survival estimates were modelled using a mixed model approach (De Angelis et al, 1999; Verdecchia et al, 1998). Estimates of relative survival can be extrapolated quite far back and forward in time as needed by the PIAMOD System (Verdecchia et al, 2002).

Using the SAS NLIN Procedure (SAS, 1999) a mixed survival model was fit to age- and period-specific estimates of relative survival. This model assumes that a proportion of patients will be cured from cancer, and they will experience the same mortality risk as the general population of a similar age. The remaining fraction of patients represents the proportion of fatal cases (i.e. patients that will eventually die from cancer). The relative survival of fatal cases is assumed to be Weibull distributed, while for cured cases, it is 1.0, since they do not die from cancer. The relative survival function of the whole population of cancer patients is obtained as a mixture of the corresponding survivals as follows:

$$\sigma_k(d) = \alpha_k + (1 - \alpha_k) \exp(-(\lambda_k d)^{\gamma_k})$$

where α_k represents the proportion of patients potentially cured from cancer, λ_k the hazard of dying from cancer and γ_k the scale parameters of the Weibull distribution that describes the time to death for the

proportion ($1-\alpha_k$) of fatal cases. The estimates for the survival parameters (α, γ and λ) were determined by fitting the actual relative survival values at times (d) since diagnosis, by sex, age group and period.

Essentially, two indicators can be estimated that summarize the results obtained from these mixed survival models. The first one is the proportion of cured patients, α. The second one is the mean survival time for

$$T_k = \lambda_k^{-1}\Gamma(1+\gamma_k^{-1})$$

fatal cases, which is given by the following formula:
where Γ is the gamma function.

Once the two parameters, α and T, are estimated a given survival curve is represented by these parameters and easily made available to the PIAMOD computer program (Verdecchia et al, 2002).

Estimating and Projecting Cancer Prevalence

Cancer prevalence is the proportion, or the number, of people in a population who have been diagnosed with cancer during their lives and who are still alive at a given point in time. Cancer prevalence is another important indicator of demand for cancer services and is therefore useful for health care planning and resource allocation. Of course, this definition presupposes that cancer is an irreversible disease, and that diagnosed cancer patients remain cancer cases until death. In reality, prevalent cancer cases form a heterogeneous group in terms of health status, as they include patients undergoing clinical care, those being follow-up for cancer recurrence, patients who may be screened for subsequent secondary cancers, those who may be permanently disabled as a result of their cancer and, finally, those who may be considered cured of their cancer, thereby requiring few, if any, additional cancer services.

For the reasons given above, complete, or total, prevalence estimates may not be useful for cancer services planning. The large majority of patients who live free of recurrence for five to ten years following initial diagnosis are cured of their cancer and likely require few, if any, additional cancer services. Most usually, risk of recurrence is greatest within the first five years following diagnosis. For the purpose of cancer planning at Cancer Care Ontario, we are proposing to estimate current and future 0-9 year (limited duration) prevalence - our evidence suggests that approximately 85% of all continuing care is provided to these patients. This limited-duration prevalence estimate may be viewed as a proxy for care prevalence i.e., an estimate of prevalent cases that are still under active care.

The PIAMOD method, as described above has been used for estimating and projecting cancer prevalence. Essentially, the PIAMOD method is based on a cohort or life table approach to the integrated analysis of incidence, survival, prevalence and mortality. For each birth cohort of the population, prevalence can be expressed as a function of incidence and survival time, as follows (Verdecchia et al, 1989):

$$v_i = \sum_{j=0}^{i-1} (1 - v_j)\mu_j\sigma_{ij}$$

where the cohort-specific prevalence v_i at an exact age of i is expressed as the sum over all ages up to i of the probability μ_j of being diagnosed with cancer between age j and $j+1$ (i.e. with j less than i) times the probability, σ_i, of surviving the risk of dying from cancer up to the exact age i. The term $(1-v_j)$ represents the proportion of healthy people at risk of cancer at age j within the cohort. Because the effect of general mortality on the birth cohort is inherent in the age profile of the cohort itself, then σ_{ij} represents the probability of surviving the extra death hazard due to cancer (i.e. the cumulative relative survival rate).

The equation above gives the estimated age-specific prevalence rate (or probability) for a birth cohort, where the incidence rates and survival are known. Cross sectional prevalence estimates can be derived for the observation period in question based on a set of equations incorporating estimates for each birth cohort passing through the observation period. Average prevalence proportions over one year are estimated from birth cohort-specific exact age prevalence as follows:

$$N_t(t) = (v_i^{(z)} + v_{i+1}^{(z-1)}) \cdot 2$$

where z is the birth cohort and $t = z + i$ the index calendar year. Where incidence and survival can be projected into the future, then prevalence can also be projected accordingly.

Estimating and Projecting Cancer Mortality

Cancer mortality can be derived from cancer incidence, prevalence and survival (Verdecchia et al, 2002). For a birth cohort, expected age-specific cancer mortality, M_i, can be expressed as follows:

$$M_i = \sum_{j=0}^{i} (1 - v_j)\mu_j \sigma_{ij} \delta_{ij}$$

where δ_{ij} represents the probability of death from cancer at age i for cancer patients diagnosed between age j and $j+i$, and surviving up to exact age i. The probability σ_{ij} is derived from the cumulative relative survival curve as follows:

$$\delta_{ij} = \left(1 - \frac{\sigma_{i,j}}{\sigma_{i,j+1}}\right)(1 - q_i^*)$$

where q_i is the probability of death from competing causes at age i and δ_{ij} the relative survival rate at age i for patients diagnosed with cancer at a prior age j.

This formulation gives the estimated age-specific mortality probabilities for a birth cohort, provided that disease incidence (either observed or estimated), μ_j, prevalence, v_j and survival, σ_{ij} are known. Again, cross-sectional mortality estimates can be constructed through a system of equations for each birth cohort involved in the observation period. And when incidence and prevalence can be projected into the near future, mortality can also be projected.

2. Projecting Surgical Volumes

Introduction – A New Approach

As discussed in the provincial outlook, this year we have been working on a new volumes and rates projection methodology. Cancer services provided to cancer patients have been partitioned by Phase of Care (see below), and each phase has been aligned with either projected incidence, or mortality, or prevalence, as appropriate. We prototyped the methodology with FY 2001/2002 surgical activity, as reported in CIHI's Discharge Abstract Database. Conceptually, the model can be broken down into two major steps. The first is to project surgical volumes based on the anticipated needs of the population over the next three years. Surgical volumes are expressed in terms of Prospective Complexity Adjustment cost weights, or PACs. These relative cost weights were introduced with 2001/02 DAD data, in order to correct estimates of hospital case mix previously biased by co-morbidity reporting.

Once surgical volumes have been projected, as a second step, we assigned a cost estimate that aligns with the PACs volumes. These cost assignments reflect marginal cost increases that are directly related to the incremental increase in volumes. The following discusses the results and how we calculated them.

We anticipate overall demand for surgery to increase by approximately 15 % in total aggregate volumes over the next three years

Population need drives our projections

Traditionally, we have used incidence projections as the means to estimate the needs/demand of the population for cancer services. As discussed in the provincial outlook, we have refined our estimates of population need by examining the relationship between demand and phase of care. It is well understood that a patient will have different resource requirements based on their phase of care (e.g., an individual who has been recently diagnosed with cancer will have different needs compared to an individual who is in the final months of life). The phases of care are the following:

- **Investigative:** This phase addresses surgical services that are undertaken to determine whether the patient has cancer
- **Initial Phase:** This phase addresses surgical services that are delivered to the patient within six months post diagnosis.
- **Continuing:** This phase addresses activity that is undertaken between the initial phase and the terminal phase.
- **Terminal:** This phase addresses activity that is undertaken within six months leading to death from cancer.

It follows then from a hospital provider perspective, for a given fiscal year, services will be delivered to cancer patients who are at various stages in their disease cycle and depending upon their phase will require different amounts of resources to support treatment. (e.g., treating patients immediately after diagnosis will require different resources than treating patients who are close to death) For purposes of our surgical projections and requirements for operating room (OR) visits, we have linked our OR Cancer Surgery activity to the phases of care. Resource requirements for each phase of care are driven by our estimates of cancer incidence, prevalence and mortality in the following manner:

- An increase in cancer incidence will lead to an increase in the number of hospital admissions and/or day surgeries for those patients in their initial phase of care
- An increase in cancer prevalence will lead to an increase in the number of hospital admissions and/or day surgeries for those patients in their continuing phase of care
- An increase in cancer mortality will lead to an increase in the number of hospital admissions and/or day surgeries for those patients in their terminal phase of care.

Finally, an increase in the overall Ontario population will lead to an increase in the number of individuals who are suspected of having cancer and consequently undergo initial investigation.

Two models were used to project the surgical volumes related to the different phases of care.

i. Investigative Phase of Care

To determine what volumes are driven by the investigative phase of care, we utilized the cancer flagged inpatient and day surgery patient encounters file that contains all cancer patient admissions to Ontario hospitals for fiscal year 2001/02. Through Cancer Care Ontario's cancer flag methodology, all patient encounters that required an OR visit were selected.[1] We then connected these records with the Cancer Registry. Through this linkage with the registry we were able to determine which patients underwent investigative procedures resulting in a benign result. Those encounters were then classified as investigative.

To project investigative volumes, we calculated PACs resource utilization patterns by age and sex groups in the overall Ontario population based on encounters in fiscal year 2001/02. For example, in fiscal year 2001, we delivered, on average for investigative activity, 137 PACs (weighted cases) per 100,000 women aged 40-45 in the Ontario population. We aligned this utilization measure with future growth within each population cohort to arrive at our future projections of activity. For example, if we predicted that the population of women aged 40-45 in Ontario increased by 100,000 then we would predict that 137 additional PACs (weighted cases) of cancer OR surgery would be required to meet this demand.

ii. Initial, Continuing and Terminal Phases of Care

We took the remaining day surgery and inpatient OR encounters in our cancer flag file – these were encounters where patients were deemed to have cancer in the registry - and assigned each encounter to a phase of care according to the following hierarchical logic:

- Terminal Phase: if the encounter took place within six months of death from cancer
- Initial Phase: if the encounter took place within six months post diagnosis
- Continuing Phase: all remaining encounters that were not assigned to the terminal or initial phase

We undertook a similar process to project volumes for each phase of care. The initial step entails developing resource utilization profiles by disease site, age and sex for a given phase of care and anchoring

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[1] For detailed explanation of Cancer Care Ontario cancer flag methodology see Cancer Care Ontario, *GTA 2014 Cancer Report*, Appendix E - Surgery, Toronto, 2004

that resource utilization profile against the relevant bio-statistical projection (incidence, prevalence and mortality). The resource utilization profile was based on our observations in the FY 2001/2002 cancer flagged data set. For example, initial phase of care is closely tied to incidence, so for the year 2001/2002 we calculated the probability that an individual who was an incident case in 2001 would enter the hospital in FY 2001/2002 for cancer surgery in the initial phase of care and of those that entered the hospital, what was the average number of weighted cases (PACs) of service delivered to a given patient. These metrics were calculated for every combination of disease, age and sex for the initial phase of care. It follows then that if we had a projected increase in cancer incidence in subsequent fiscal years, then hospital admissions would rise based on the probabilities that we observed in FY 2001/2002 resulting in an increase in the associated number of surgical /OR weighted cases (PACs).

We created similar resource relationships for the continuing and terminal phases of care. The notable exceptions were that in constructing the resource demand profiles, we anchored the continuing phase activity with ten year limited-duration prevalence and terminal phase activity with cancer mortality. As predictions of mortality and prevalence increase/decrease, demand for OR services would increase/decrease accordingly.

Surgical Volume Projections Over the Next Three Years

The following tables illustrate our surgical volume projections. The first table describes the volumes based on the four phases of care, the second table describes our projections based on disease site, and the final table describes our projections based on type of hospital.

For each of the tables, total volumes are provided for fiscal year 2001/02 and fiscal year 2003/04. For subsequent fiscal years (05/06, 06/07 and 07/08) the accumulative incremental increase over base year 04/05 is expressed.

a. Cancer Surgery Volumes by Phase of Care (Volumes expressed in PACs 2001/02)

We anticipate that hospitals will need to provide approximately 17,000 new PACs weighted surgical cases over the next three fiscal years. Close to 50% of the increase will be driven by new incident cases of cancer requiring surgery within six month post diagnosis (initial phases). Investigative procedures will account for approximately 12% of the increase in surgical volumes. In FY 2004/2005 we estimated that the number of terminal phase weighted cases was marginally higher than continuing phase weighted cases but in terms of growth over the next three fiscal years, we anticipate that number of weighted cases to treat patients in the continuing phase will rise faster than the terminal phase. We hypothesize that this is due to steady improvements in cancer survival as well as increasing incidence of new cases.

	Total Volumes		Cumulative Marginal Annual Volumes Increases Against FY 04/05 Baseline			
	FY 01/02	FY 04/05	FY 05/06	FY 06/07	FY 07/08	Total FY 05-07
Investigative	14,830	15,808	328	661	994	1,983
Initial	51,571	55,486	1,465	3,043	4,668	9,177
Continuing	16,406	18,058	578	1,189	1,825	3,592
Terminal	19,409	20,459	358	741	1,138	2,236
Total	**102,215**	**109,812**	**2,729**	**5,633**	**8,625**	**16,987**

b. Cancer Surgery Volumes by Disease Site (Volumes expressed in PACs)

The following table expresses activity for cancer disease sites. These projections are based on our estimates for the initial, continuing, and terminal phases of care – but not the investigative phase (investigative projections were based on changes in underlying population and were not parsed out according to suspected disease site). We estimate that the increase in the demand for surgical services will be driven in large part by colorectum, prostate and other types of cancer combined. Regarding prostate cancer, it should be recognized that there is appreciable uncertainty in these projections, largely because of the rapid rise in cases seen in the 1990s, mostly attributable to the introduction of PSA screening. During the next decade, we may see either institutionalization of this test, or its disappearance, depending on the results of community-based trials of PSA screening. As another new year of cancer registrations are added to the Cancer Registry, it will be important to redo these projections.

	Total Volumes		Cumulative Marginal Annual Volumes			
	FY 01/02	FY 04/05	FY 05/06	FY 06/07	FY 07/08	Total FY 05-07
ColoRectum	20,772	22,564	570	1,204	1,799	3,574
Lung	8,317	8,589	120	243	386	750
Breast	7,622	8,279	196	379	589	1,164
Prostate	7,343	8,187	527	1,094	1,718	3,339
Other	43,330	46,384	989	2,051	3,139	6,179
Total	87,385	94,004	2,401	4,973	7,631	15,005

How much will the additional activity cost?

In the long term, our intent is to develop rates for cancer services that reflect the marginal increase in costs associated with the marginal increase in activity, with some acknowledgement of one time investments to cover fixed costs. Our estimation of marginal costs will heavily rely on existing costing methodologies and tools currently used in Ontario's hospital funding system, i.e., the average cost per PACs weighted case or the expected cost per PACs weighted case.[2] We are currently assessing utilizing the direct cost components of these measures to generate an average, weighted by the relative volumes of hospitals contributing to the average.

The hospitals that will assume the new volumes will be determined through our waiting list initiative that will express the vision of how cancer surgical services should be delivered to the population. As a consequence, our development of rates is currently in the infancy stage and will require further modeling, validation and consultation with our stakeholders. In the interim, we are using an estimate of $4,000 per PACs weighted case. This rate will be further refined in the future. Using the estimate of $4,000 per PACs weighted case, we estimate that, over the next three years, the MOHLTC will need to infuse approximately 68-million dollars (16,987 PACs X $4,000) into the cancer surgery system to meet increased demand.

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[2] Every year, the MOHLTC calculates for each hospital an average cost per weighted (PACs) case. The numerator is derived from the annual financial/statistical returns from the hospital, and the denominator is derived primarily from summing the weighted cases from the hospital patient activity data sets, including the CIHI DAD.

Assumptions and Limitations

- The forecasts are based on Fiscal Year 01/02 cancer-related hospitalization and day surgery data linked to incident cases in the Ontario Cancer Registry who were still alive as of April 1, 2001. The PACs 01/02 version of weighted cases was utilized, as a measure of the relative cost of hospital-based care. In future, we will be using more current data, and a time series approach, to assess temporal changes in utilization rates. We were unable to use FY 2002/2003 data because the Office of the Registrar General had not yet forwarded a final death file for 2003 in time for death clearance of FY 2002/2003 cases.
- A "cancer flag" was developed to identify all cancer-related hospitalizations and day surgeries. Essentially, if a diagnosis of cancer existed on an abstract, or a cancer-related procedure was reported, then it was flagged. The rules for determining this are described in Appendix E Surgery of the *GTA 2014 Cancer Report*.
- Site-specific information (i.e., cancer type) was derived from the summary case record in the OCR. Where two or more primaries were registered for the same patient, then the most recently registered incident case was selected.

- Prevalence, which was used to forecast requirements for the continuing phase of care, was based on 0 - 10 year limited duration prevalence as of July 1, 2001. It was determined that the majority (approaching 85%) of OR encounters within this phase was driven by those who were still alive and had cancer diagnosed up to 10 years previously.
- The biostatistical projections for incidence, prevalence and mortality do not include those aged 90 and greater in the Ontario population. This was primarily because population estimates and forecasts were not available by single year of age above 89 years. These statistics drive our estimates for the non-investigative phases of care PACs volumes. Consequently, we applied a correction factor of 1.5% per year to the PACs estimates for initial, continuing and terminal phase projections. The 1.5% correction factor was calculated based on cancer flag 01/02 data resource consumption profile of those patients 90+ years of age at the time of the encounter.
- Costs of hospital-based care are determined by a number of patient-, cancer- and provider-specific characteristics. They are also determined by the phase of care that a patient is in during the natural history of their cancer : Investigational Phase, Initial Phase, Continuing Phase and Terminal Phase (see above).
- For short survival cases (e.g., less than 6 months following diagnosis), patterns of hospitalization and day surgery are more like the terminal phase of care, rather than the initial phase.

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3. Figure 10: Ontario 2004/2005 estimated expenditures on cancer care

Hospitals: $1,122-Million

Inpatient and Day Surgery Projections ($912-Million)

These projections were calculated using a formal projection methodology developed for the cancer plan, which accounts for all types of cancer patients who were admitted to hospitals as either an inpatient or day surgery case. The projections were based on Fiscal Year 2001/2002 hospital CIHI DAD abstracts and the cost per weighted case calculations of the MOHLTC. Hospital activity was defined using Cancer Care Ontario's cancer flag methodology that was developed during the GTA planning process. This number represents what hospitals should be spending on cancer services in FY 2004/2005 based on our understanding of changes in population demographics and hospital cost structures and uses a conservative 2.5% inflation rate.

Outpatient Radiation and Systemic Therapies at ICPs and PMH ($160-Million)

This number was calculated using the estimated outpatient costs for radiation and systemic therapies as reported by the ICPs to Cancer Care Ontario for fiscal year 2004/2005. PMH's estimates for these functions were added to Cancer Care Ontario's ICP costs. These costs are net of New Drug Funding Program costs (NDFP).

Other Clinics ($50-Million)

Costs for outpatient cancer functional centres (or oncology clinics) beyond the costs reported above for ICPs and PMH radiation and systemic therapy expenses. The estimate was based on the Ontario hospitals annual financial and statistical submissions to the MOHLTC for fiscal years 2001/02 and 2002/03. These costs are net expenses (net of recoveries, etc). In addition, they exclude the total outpatient cost of cancer drugs reimbursed by NDFP and the net cost of cancer drugs from all sources. This is potentially a conservative estimate because the reporting of cancer activity and costs may also be embedded in outpatient functional centres that are not explicitly identified as directly related to cancer (e.g., a hospital may roll up all patient care activity (including cancer) and related costs into a generalized functional centre).

Additional Cancer Care Ontario Programs: $214-Million

These are the expected FY 2004/2005 expenditures that Cancer Care Ontario incurs to fund additional cancer services net of ICP costs for systemic therapy and radiation oncology (these were accounted for under the hospital expenditure section). These expenditures include the Ontario Breast Assessment Program, New Drug Funding Program and other programs and administration.

Additional Drug Expenditures through Ontario Drug Benefits Program: $110-Million

We estimate that in FY 2004/2005 the Ontario Drug Benefits Program (ODBP) will spend approximately $110-million dollars on cancer patients. In FY 2003/2004, ODBP spent approximately $98-million on anti-neoplastic drugs. We added the additional 10-million to account for inflation, potential increase in demand.

OHIP: $461-million

Physician Fees for Physicians dedicated to treating cancer ($161-million)

Estimated OHIP Physician Fees were calculated using $315,000 as a nominal fee per physician in FY 2004/2005 and multiplying this fee by an estimated number of dedicated surgical and medical oncologists and non-oncologists (small number providing oncology related services).

Additional Potential OHIP Costs ($300-million)

This is the potential cost of OHIP services above and beyond the 161-million for dedicated oncologists, including the technical and labs fees for cancer screening procedures, fees for diagnostic imaging, and physician fees for general practitioners and non-oncology specialists delivering services to cancer patients throughout the continuum of care. It is difficult to actually track these expenses due to lack of access to OHIP billing data and tracking of cancer patients throughout the system. We estimate that approximately $117-million was spent on procedures to screen for cancer by taking the FY2004/2005 OHIP Fee Schedule for the technical and lab components of cancer disease site screening procedures (i.e. FOBT, Bilateral Mammography, etc.) and multiplying those fees by the estimated number of screening procedures performed in the province in the FY 2001/2002. Further, we know beyond this cost that a number of other services are delivered to cancer patients and billed through OHIP (for example, it is estimated that over 1,000 non-oncologist surgeons perform procedures on cancer patients annually, etc.). It is also known, that in the system as whole OHIP billings are approximately 65% of total hospital expenditures. If we apply this ratio to our estimate of hospital expenditure on cancer services, then the approximate ceiling would be $700-million for OHIP expenditure on cancer including dedicated oncologists. By backing out the dedicated oncologists $700 less $161-million we arrive at a figure of $539-million. Given that we can account for $117-million on procedures for screening and we know that a significant amount of addition activity is being undertaken for cancer patients, we conservatively estimated the ceiling to be $300-million for additional OHIP costs.

CCAC: $104-million

In FY 2004/2005, it is estimated that approximately 1.3-billion will be spent in Ontario for Community Care Access Centres (CCAC) services. CCAC cancer related expenditures were estimated as 8 % of their total provincial expenditures. This estimate was based on the observation that hospitals spend approximately 8% of their total budgets to deliver cancer services. It has been argued that this proportion is low and that CCACs would spend more, on a proportional basis, on cancer services than hospitals. However, this is difficult to ascertain given the data that was available to us at the writing of the plan. Consequently, we adopted this conservative estimate.

Public Health: $39-million

We estimate that in FY 2004/2005 that approximately 50% of the budgeted operating expenses for MOHLTC Health Promotion and Disease Prevention Program (HPDPP) will be spent on cancer prevention and health promotion. HPDPP FY 2004/2005 budget is approximately $78-million. Consequently, we arrived at the figure of $39-million. This estimate assumes that roughly half of the budgets of the Public Health Units Health Promotion and Disease Prevention programs are dedicated to cancer surveillance and prevention.

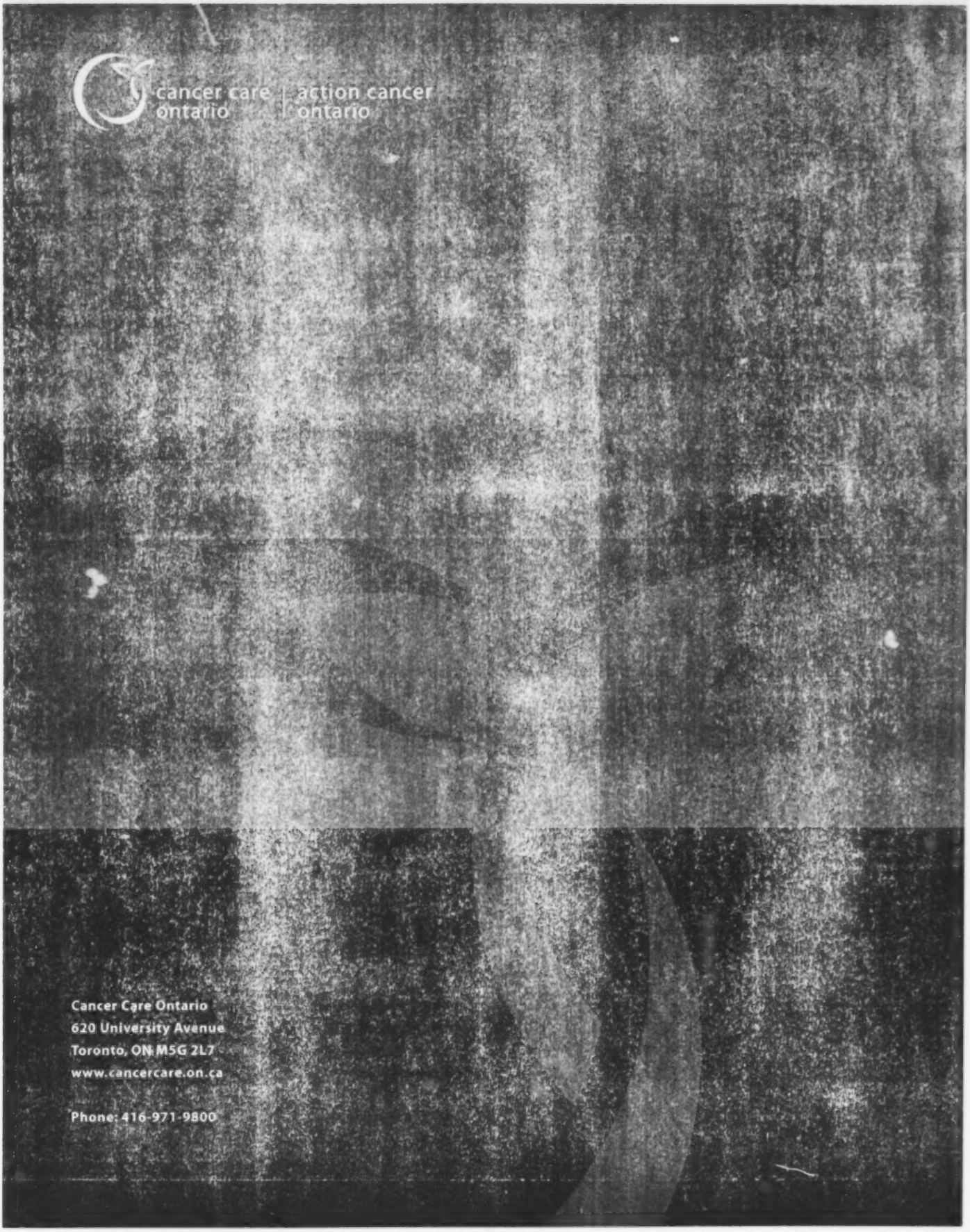
Appendix E: Glossary of Terms and Acronyms

ACCU	Aboriginal Cancer Care Unit, formed in 2000 within the Division of Preventive Oncology at Cancer Care Ontario
Cancer 2020	Comprehensive action plan (2003) developed by the Canadian Cancer Society and Cancer Care Ontario. This action plan focuses on strategies leading to cancer prevention by the year 2020.
CAP	College of American Pathologists
CARO	Canadian Association of Radiation Oncologists, a national professional group
CCAC	Community Care Access Centre
CCHSA	Canadian Council of Health Services Accreditation. Health services organizations achieve accreditation by undergoing an objective evaluation of the care and quality of services they provide to clients, and then comparing these findings against a set of national standards (www.ccsha.ca).
CCO	Cancer Care Ontario, provincial cancer agency and principal advisor to the Ministry of Health and Long-Term Care on cancer issues
CIHI	Canadian Institute for Health Information is an independent, pan-Canadian, not-for-profit organization working to improve the health of Canadians and the healthcare system by providing quality, reliable and timely health information (www.cihi.ca).
COC	Commission on Cancer, a national agency focused on cancer control in the United States
COLA	Cost of living adjustment
Continuum of Care	Includes all domains of the potential patient journey with cancer: prevention, screening, diagnosis, treatment, supportive care, palliative care and end-of-life
CPOE	Computerized Physician Order Entry is a methodology intended to computerize all physician orders, both in the ambulatory and in-patient settings.
CQCO	Cancer Quality Council of Ontario
CRC	Colorectal cancer, a specific type of cancer of the gastro-intestinal system
CROS	Canadian Radiation Oncology Services, an innovative model of radiation therapy delivery carried out in Ontario from 2001 to 2003
CSIC Report	Cancer Service Implementation Report (2001), commissioned by the Ministry, and chaired by Dr. Alan Hudson. The CSIC Report formed the basis for the integration agreements and change of CCO from a *provider* of care to a *purchaser* of care model.

C1S	New case visits to the systemic program
C1R	New case visits to the radiation program
DAD	Discharge Abstract Database used to determine hospital patient activity
DHC	District Health Council
EOL	End-of-life care related to the overall strategy of palliative care. The Ministry has defined an EOL strategy within the Community Branch, and CCO is participating on the Provincial EOL Advisory Committee.
FOBT	Fecal Occult Blood Test examines the presence or absence of blood in fecal matter as a precursor to colon cancer.
FP	Functional Program is a narrative document that identifies the functions, procedures, workload, staffing and physical space requirements for a project.
GI	Gastro-intestinal disease site
GTA	Greater Toronto Area is made up of the city of Toronto, and the regions of Durham, Halton, Peel and York
GTA 2014 Report	Greater Toronto Area 2014 Cancer Report published June 2004
HMO	Health Maintenance Organization, most often found in the U.S. as part of the managed healthcare programs
HPB Surgery	Hepato-biliary surgery of the liver or gall bladder
HPV	Human Papilloma Virus, associated with cancer of the cervix in women
ICES	Institute for Clinical Evaluative Sciences is an independent, non-profit organization that conducts research on a broad range of topical issues to enhance the effectiveness of health care in Ontario (www.ices.on.ca).
ICP	Integrated Cancer Program. Created when the cancer centres became priority programs of the host hospital, as outlined in the Integration Agreements.
IM	Intra-muscular refers to the way a medication can be injected into the blood system, through the musculature.
IMRT	Intensity-modulated radiation therapy is an advanced mode of high-precision radiotherapy that uses computer-controlled X-ray accelerators (treatment machines) to deliver precise radiation doses to a malignant tumour.
IM Strategy	Information Management Strategy, a comprehensive approach to enhancement of electronic information proposed by CCO
IT	Information technology
IV	Intravenous therapy, used as one route to deliver medications, such as chemotherapy, directly into the blood system
JOACC	Joint Ontario Aboriginal Cancer Committee formed in 1996 between Cancer Care Ontario and Aboriginal organizations in Ontario

LHIN	Local Health Integration Network
MCU	Ministry of Colleges and Universities, Ontario
MEDT	Ministry of Economic Development and Trade, Ontario
Ministry, or MOHLTC	Ministry of Health and Long-Term Care, Ontario
MRI	Magnetic Resonance Imaging
MYF	Multi-year funding, a methodology to project operating funding requirements
NCIC	National Cancer Institute of Canada, a national cancer research program funded by the Canadian Cancer Society
NCRI	National Cancer Research Institute, a government-supported coalition of large cancer research funders in the United Kingdom
NDFP	New Drug Funding Program, provincial formulary formed in 1997 to manage new drug (IV chemotherapy) reimbursement
NGO	Non-governmental organization
NHS	National Health Service, in the United Kingdom
NQF	National Quality Forum, located in Washington, D.C., U.S.A. CCO is a member organization.
OBSP	Ontario Breast Screening Program
OCP	Ontario Cancer Plan, also referred to as Provincial Cancer Plan
OCR	Ontario Cancer Registry, a computerized database of all information on Ontario residents diagnosed with cancer (incidence) or cancer deaths (mortality)
OCRN	The Ontario Cancer Research Network (OCRN) is a not-for-profit corporation working to accelerate the development and testing of promising new cancer therapies
ODB	Ontario Drug Benefit program, Ontario's provincial public drug formulary
OLIS	Ontario Laboratory Information System
OPIS	Oncology Patient Information System, to gather and utilize accurate patient information to facilitate care
PAC	Prospective Complexity Adjustment is a methodology to determine relative cost weights in the Ontario acute care system.
PCOP	Post-construction operating plan is the approved Ministry operating budget associated with new cancer centres following construction.
PCP	Provincial Cancer Plan, also referred to as Ontario Cancer Plan

PEBC	Ontario's Program in Evidence-Based Care, funded by the Ministry of Health and Long-Term Care. PEBC develops, disseminates and evaluates knowledge synthesis products, such as Clinical Practice Guidelines for clinicians in cancer care.
PIAMOD	Prevalence and Incidence Analysis Modelling software, developed by the Italian Institute of Public Health
PIMS	Pathology Information System, intended to provide pathology information in a standardized, real-time, electronic format to clinicians
PMH	Princess Margaret Hospital, Ontario's comprehensive cancer hospital and part of the University Health Network
PSA	Prostate Specific Antigen is a protein made only by the prostate gland. High levels of PSA in the blood may indicate prostate cancer.
RADU	Rapid access diagnostic unit designed to provide one-stop access for diagnostic services for people suspected of having a cancer diagnosis
RT	Radiation therapy, a modality of cancer treatment
RVP	Regional Vice President. Each Integrated Cancer Program is led by a RVP.


cancer care ontario
action cancer ontario
Cancer Care Ontario
620 University Avenue
Toronto, ON M5G 2L7
www.cancercare.on.ca
Phone: 416-971-9800